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Gleanings in Bee Culture

Index for 1918

Published by The A. I. Root Company, Medina, Ohio

Index to Gleanings in Bee Culture

Volume XXXVI

In using this index the reader should not fail to note that it is divided into five departments, namely, General, Editorial, A. I. Root's writings, Contributors, and Illustrations. The index of General includes everything except Editorials, Illustrations, and A. I. Root's writings.

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In Its 46th Year



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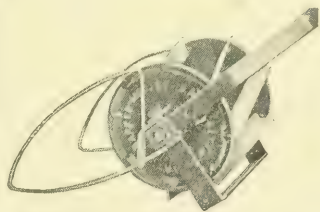
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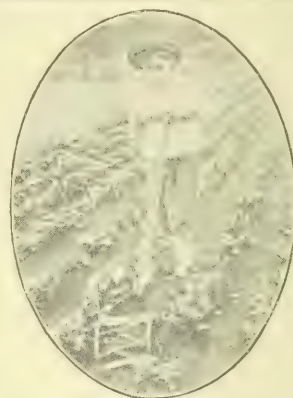
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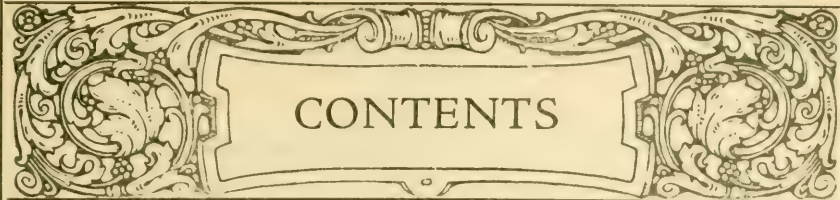
WANTED---50 TONS BEESWAX for Manufacture into SUPERIOR FOUNDATION---Weed Process.

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Superior Honey Company, Ogden, Utah



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Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly.

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

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"When we receive your Honey
Return mail brings your Money."

The Fred W. Muth Co.

Get Service Like this Man

Lake City, Mich., May 5, 1917.

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Yours truly,
(Signed) Elmer Hutchinson.

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We buy all grades of Extracted Honey. Large or small lots. Send sample and price. If price is right we will buy. Parties who have Fancy and No. 1 Comb Honey, write us at once. We will buy from 40 to 50 carloads this season.

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Send us your beeswax. We pay highest market prices, and send you our check the same day shipment is received.

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Make some spare money from the wax rendered from your old comb. We will render it, charging only 5 cents per pound for rendering, and pay you best market prices for the wax rendered.

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We are prepared to ship you the same day order is received any number of shipping-cases. Several carloads are here now, ready for buyers. Send your order in now before our supply is exhausted. We sell Lewis Beeware.

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We remit the same day your shipment arrives. Read the letter above and be convinced that this is the house to send your shipments to. Try us.

The Fred W. Muth Co.

"The House the Bees Built"

204 Walnut St., Cincinnati, Ohio

Early-order Discount

The early-order cash discount for January is two per cent. The number of producers who take advantage of special discounts for fall and winter orders is constantly increasing. Send us a list of your 1918 requirements, and we will furnish you with quotations. Root's Goods only. The quality is right. . . Beeswax wanted.

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510 No. Cedar Street

NOTICE!

Honey . Wanted . Honey

Do not forget, when your crop of honey is ready for sale, to send us a sample. State your price, also how it is put up. We are in the market for unlimited quantities, and will pay cash on arrival. Let us hear from you before selling your crop.

C. H. W. Weber & Co., Cincinnati, O.
2146 Central Avenue

HONEY MARKETS

There is so little honey, either comb or extracted, left in the hands of producers, that to quote honey markets may well seem like catering to the curiosity rather than to the service of the beekeepers. But the honey markets may well be a matter of curiosity, for no such conditions have ever before surrounded the market. Almost unprecedented prices, in some instances, have been offered during the last month for quick deliveries of carloads of honey at New York. For what purpose or market these high prices were offered, we don't know. How stable the honey market will continue, nobody knows, for sugar prices are uncertain with the probability of easier sugar in the near future when the new beet, Louisiana cane, and West Indian crops come onto the market. Some markets, too report, light retail demand because of too high price.

With this much said, and saying again that the price of honey today is what the owner can get for it, we would add that, if we were a honey-producer with a crop of either comb or extracted to sell, we would not take less than the highest price we had known to be paid in our locality.

Below we quote the wholesale price (price to the retailer, not to the producer of the honey) as sent us by various large city dealers, also the U. S. Government Bureau of Markets honey prices:

General Quotations of Wholesalers.

[These firms are asked to quote the wholesale prices they make to retailers. Accordingly, their prices must be figured at least one profit higher than the price paid the producer.]

NEW YORK.—Market is well cleaned up on both comb and extracted honey, all grades; prices very firm; very little domestic in sight. West Indian will not arrive till next month; \$1.75 to \$1.90 is asked for West Indian to arrive; very little steam space available; freight and insurance rates very high; export demand therefore is light.

New York Branch.

New York, N. Y., Dec. 24, 1917.

LIVERPOOL.—Since our last cable report the price of extracted honey has remained firm at 24 to 26 cents per lb. in barrels. We see no possibility of a decline in the immediate future because the American Government has commandeered 95 per cent of all space in steamers coming this way for Government purposes, so that only about 5 per cent remains for the accommodation of the public, and for this the steamship companies are claiming \$4.00 to \$5.00 freight for every 100 lbs. There seems to be a good crop in Cuba, for a shipper has offered us 1,000 barrels, which we are unable to avail ourselves of owing to the lack of transport facilities caused by enemy submarines. This is a matter which will govern prices very largely for the future. The price of beeswax is easy at present; 42 to 47 cents per lb. according to quality.

Liverpool, Eng., Dec. 5.

Taylor & Co.

ST. LOUIS.—Our market is pretty well cleaned up on comb honey. While receipts of local honey have been quite small this fall, the demand for comb honey has been light owing to high prices. Extracted honey is in good demand, and supplies not overly large. We quote comb honey, extra fancy, per case, \$5.50; fancy, \$5.25; No. 1, \$4.75; No. 2, \$4.25. Extracted honey, white, per lb. 17; light amber, in cans, 16; amber (dark), 14 to 15. Clean average yellow beeswax brings 40 cts.

R. Hartman Produce Co.

St. Louis, Mo., Dec. 17.

CHICAGO.—During the past month there has been little if any variation in prices, with quite a good demand, so that arrivals have cleaned up in a satisfactory manner. During this month the weather has been too cold for safe shipment of comb.

Chicago, Dec. 18.

R. A. Burnett & Co.

BUFFALO.—Market price on white comb honey is steady. Strained honey is very scarce and in good demand. We quote comb honey, fancy, per lb., 22; No. 1, buckwheat, 21. Extracted honey, white, per lb. 17; light amber in cans, 16; amber, in cans, 16.

Buffalo, Dec. 15.

Gleason & Lansing.

KANSAS CITY.—The market is very firm on comb honey. It is selling at \$4.75 per case for No. 1. There is no No. 2 or other grades on the market, and very little No. 1. Extracted is selling from 15 to 20 cents per pound, according to quality and grade. Clean yellow beeswax brings 35 cts.

C. C. Clemons Produce Company.

Kansas City, Mo., Dec. 17.

PORTLAND.—Stocks of comb and extracted honey are low, with practically no demand, on account of high prices. We quote comb honey, extra fancy, per case, \$4.50; fancy, \$4.25; No. 1, \$4.00; No. 2, \$3.75. Extracted honey, white, per lb., 17; lightamber, in cans, 16; amber, in cans, 15.

Portland, Ore., Dec. 12.

Pacific Honey Co.

SYRACUSE.—The stock of honey in the hands of the wholesalers is pretty well exhausted. We have practically nothing to offer except to city trade. We quote comb honey, extra fancy, per case, \$5.04; No. 1, \$4.50. Extracted honey, white, per lb., brings 18.

Syracuse, N. Y., Dec. 19.

E. B. Ross.

CLEVELAND.—Demand fair. Supply in market is very limited. We quote comb honey, fancy, per case, \$5.50; No. 1, \$5.00 to \$5.25.

Cleveland, O., Dec. 20.

C. Chandler's Sons.

MONTREAL.—Market is firm and stocks light. We quote comb honey, per lb., white, 21; No. 1, brown, 16; No. 2, per lb., white, 17; No. 2, brown, 12. Extracted honey white, per lb. 19; light amber, in cans, 18; amber, in cans, 17;

Gunn, Langlois & Co., Ltd.

Montreal, Can., Dec. 17.

DENVER.—No change from last quotation.

The Colorado Honey Producers' Association.

U. S. Government Market Reports.

Honey Arrivals Since Last Report.—Medina, O., 98,607 pounds Idaho; 72,300 pounds Wisconsin; 30,020 pounds Michigan; 30,115 pounds Minnesota; 1546 pounds Ohio. Hamilton Ill., 675 pounds Iowa.

Arrivals include receipts during preceding two weeks. Prices represent current quotations.

Philadelphia.—12 barrels Southern, 40 cases New York, 297 cases Idaho, 130 cases local comb arrived. Demand very active, market very strong; practically no honey offered for sale; very few sales. Extracted honey—Southern and imported, barrels, \$1.95 to \$2.10 per gallon. Beeswax—no sales reported.

Minneapolis.—No rail arrivals; local receipts extremely light. Demand moderate, market strong, all sales in small lots. Comb honey: Minnesota, 24-section cases, extra fancy white, mostly 20 cts. per pound; No. 1 white, mostly 18 to 19 cts.; Colorado, 24-section cases, mostly \$5.00. Extracted honey: Minnesota, white, 10, 20, and 60-pound cans and pails, mostly 21 cts. per pound. Beeswax—no sales reported.

St. Paul.—No rail arrivals, very light local receipts. Demand moderate, market very firm, very few sales, all sales in small lots. Comb honey, Colorado, white, 24-section cases, \$4.75. Extracted, Minnesota, white, 50-pound cans, 17 cts. per pound. Beeswax—no sales reported.

Chicago.—Supplies and receipts very light. Comb honey, stock from nearby states, best white, 23 to 24 cts. per pound, mostly 23. Extracted honey, best nearby, 16 to 17; California, light amber, mostly 17 cts.

New York.—Arrivals, 465 barrels Cuba, 11 barrels Porto Rico, 2 boxes Dutch West Indies, 18 barrels

rels Domestic, 1 Illinois. Domestic, no sales reported. West Indian, supplies cleaning up; demand good, market firm; good demand for export, but hard to get ship space; 16 to 17½ cts. per pound. Beeswax—73 bags Cuba arrived. Demand moderate, market steady, demand moderate for export. Yellow, 38 to 39 cts. per pound; fancy South American, 40; dark, 35-37.

St. Louis.—Supplies very light, practically no movement. Extracted, cans, Southern, 14½ to 15 cts. per pound. California, 16. Beeswax—no sales reported.

Denver.—Approximately 3500 pounds white to light amber extracted arrived. Comb honey, receipts very light. Demand exceeds supply, market strong. Comb honey, few sales; Colorado, 24-section cases, No. 1 white, \$4.05; No. 2, \$3.65. Extracted honey, white to light amber, 16 cts. per pound. Beeswax—receipts very light; price to producer, 40 cts. per pound.

Kansas City.—No fresh arrivals. Demand light, movement moderate, market firm, few sales, all sales in small lots. Comb honey, Colorado, quality and condition generally good. White No. 1, \$4.25 to \$4.50 per 24-section case. Extracted honey, Colorado, quality and condition generally good. White and extra light amber, 15 to 18 cts. per pound. Beeswax—no supplies, no sales reported.

Cincinnati.—Receipts, extracted honey: 2 cars Colorado, 1 car California. Comb, 1 car Colorado. Demand and market fair, movement slow. Extracted honey, domestic light amber, 17 to 18 cts. per pound. Orange and white sage, 19. Comb honey, 24-section cases, fancy white, heavy, \$5.00 to \$5.75. No. 1 white heavy, \$4.75. Bees, demand moderate, market steady. Average yellow, 38 to 40 cts. per pound.

CHARLES J. BRAND,
Chief of Bureau.

Washington, D. C., Dec. 15, 1917.

NOTICE

Beekeepers' Supplies

We are now located in our new plant equipped with the latest machinery for making supplies. Write for catalog, which will be ready for mailing in January.

We Can Save You Money

no matter how large or how small your order is. A trial will convince you. Quality first.

We also render your wax from old comb and cappings. Our charge is only 5 cts. per pound for the wax rendered. Our steam press extracts every particle of wax possible to get.

Give us a chance to bid on your wants. Write for catalog today. All correspondence cheerfully answered.

The M. C. Silsbee Co., Avoca, New York

Gleanings in Bee Culture . .)
Green's Amer. Fruit Grower } \$ 1²⁵
American Poultry Advocate }

[Canadian postage, 75c extra; foreign postage, \$1.25 extra.]

Address Gleanings in Bee Culture, Medina, Ohio

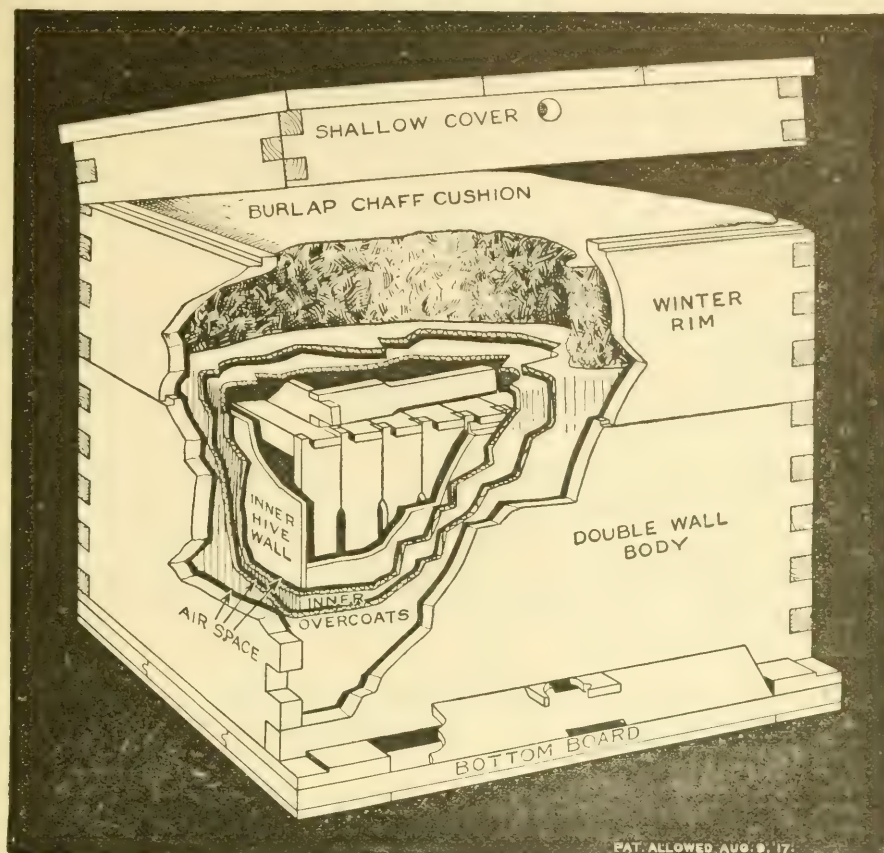
A Fortune in Bees

One of our large beekeepers in New York State last season secured \$10,000 worth of honey, and several in our immediate vicinity did very well, reaping \$1000 to \$5000 for their season's work.

They are planning now for next season. These looking ahead are those that will have next fall another good crop at remunerative prices. Would it not be well for you to look ahead and lay plans for next summer? besides, our government needs all the food possible to produce.

F. A. Salisbury, Syracuse, N. Y.
1631 West Genesee St.

WOODMAN'S New Protection Hive



PAT. ALLOWED AUG. 9, 17.

The Hive with an inner overcoat. . Wintered 100 per cent perfect in 1916-17. . . Winter Problem Solved.

The same dimensions as formerly. The construction now is such that a bottomless corrugated paper box can be telescoped down over the brood nest, in between the outer and inner hive walls, as a matter of insulation or protection when preparing them for winter. The work of preparing the bees for winter with this system is a joy. In spring the boxes are removed and stored away in the k. d. flat. A new circular with large illustrations will describe all. Send today for one.

TIN HONEY-PACKAGES

YOU WILL MAKE A MISTAKE if you do not ask for our LOW PRICES on Friction Top Pails and Cans. We are SAVING MONEY for carload buyers and others of smaller lots, why not you? Our three-year contract is enabling us to make prices a considerable under general market quotations. Let us hear from you, specifying your wants.

FRICITION-TOP TINS

	2 lb. cans	2½ lb. cans	3 lb. cans	5 lb. pails	10 lb. pails
Cases holding	24	24	..	12	6
Crates holding	..	..	..	50	50
Crates holding	100	..	100	100	100
Crates holding	603	450	..	203	113

A. G. Woodman Co., Grand Rapids, Michigan

Why Order Early?

With the exceedingly high price of honey and the urging on the part of the State Department for the production of every ounce of produce possible, you as a beekeeper are going to do your part and have probably already made up your mind to increase your holdings in bees to the limit of your capacity in caring for them.

Possibly, however, you have lost sight of the fact that it is greatly to your interest to get in your orders for bee supplies now.

Freights are Slow The congestion of last year may be repeated. Many beekeepers who ordered their supplies in February were barely able to get delivery in time for the white clover flow. Others had to cancel orders, and still others had supplies arrive after the critical storing period was over. **YOU CANNOT AFFORD TO LET YOUR BEES WAIT A DAY ON DELAYED FREIGHT SHIPMENTS.**

Early Order Discounts Save You Money We want as many early orders as possible. This gives us less of a rush in spring, when a too large proportion of beekeepers order their supplies. This is why we can make a closer price for an order sent in before the new year opens. If your bankers were to offer you fifteen per cent interest on your deposits, you would certainly grab the chance. A three or four per cent discount on supplies for ordering them three months earlier than usual means ten or fifteen per cent interest on your money for the year, and you have your goods on time, without fail.

Send Us a List of Your Requirements. We are in a Position to Give You a Very Close Estimate for Early Order.

Are You Throwing Money Away?

No? But are you throwing away old combs, small lots of cappings, or else beeswax scrapings and propolis from the tops of your frames when you clean them? If not, perhaps you are melting up your combs in an old-fashioned way and getting only about half the wax out of them.

Many beekeepers last year secured their season's supply of

Dadant's Foundation

by sending in their combs and cappings to be rendered into beeswax and made up into foundation. Our high-pressure steam outfits get all the wax possible, save these same beekeepers an unpleasant job and return more beeswax in the shape of foundation than they could get by the extra work themselves. If you prefer we will pay you **HIGHEST CASH PRICE** for all beeswax rendered.

—Send For Our Terms—

WE WANT BEESWAX—ASK US FOR OUR BEST PRICES

Dadant & Sons, Hamilton, Illinois

GLEANINGS IN BEE CULTURE

JANUARY, 1918

EDITORIAL

THE NEW YEAR of 1918 opens with very unusual promise for beekeepers. That promise is one of continued high prices for their honey.



The Outlook and the Opportunity for 1918

Those prices now are the highest ever known, and it is not too much to say that they will probably be high next summer—just how high in dollars and cents we cannot say, because so much depends on local conditions. Last season's crop left in the hands of beekeepers and in storage is very small. There is only a little left at the retail stores, and that little will soon be exhausted. If producers last year had secured double and treble what they ever did before, it is our opinion the market would still be almost bare of honey. So even if it were possible to produce that much, prices would still be high and every pound would be taken.

The use of sugar is to be cut down by the United States Food Administration still lower to 3 lbs. a month per person, or a little more than one-third the normal* amount consumed. The nations of Europe, so far as sugar is concerned, are in worse condition than we, for while they have sugar, the amount is much smaller than in the United States. Europe is crying for sugar, and must have it. To make up for the shortage she bought honey last season in enormous quantities and by the shipload, and is still trying to get it. She will be eager to get the new crop as soon as it is available.

In addition to the enormous demand for honey by the allies, the old avenues of trade in this country are scouring the country to find honey. Since the war began, and since the wide increase of advertising, honey, so far from being a luxury, is coming to be recognized in this country as a staple article of food. When sugar can be obtained only in limited quantities, honey is the only substitute that can be used, and the housewife is using honey as she never did before and, what is more, honey has gone into her home to stay.

The time was, and not so very long ago either, when the beekeeper who produced his honey had to find a buyer; and even then he had to shade the price down, down, down,

in order to make a sale. Today the tables are turned. The beekeepers are staying at home, and the buyers are coming to them. It is not the beekeepers who are shading their prices now. It is the buyers, one after another, who are coming across with more and more money.

Only recently we came across a case where a producer had a little honey. The buyer asked him how much he would take for it. He named an advanced price. The buyer came back, saying he could not pay it, and the beekeeper began to think he had put the price too high. The next mail brought another letter from the buyer, saying he had concluded to take all his honey at the price stated; and so on it goes.

Even tho there should be an early world peace, the price would still be high on everything, including honey. All food supplies are short, and will be for some time after the great war is over.

Taking everything into consideration, it is important that the beekeepers of this country and Canada speed up. They have the greatest opportunity they ever had. They owe it as a duty to themselves, and, more than all else, they owe it as a duty not only to their country and to their allies but to a whole hungry world. As long as the war lasts, sugar will continue to be held down to very small amounts per capita consumption—not enough to supply a balanced ration to each family. It becomes, therefore, a patriotic duty on the part of every beekeeper to help make up this balanced ration, because honey is now a recognized and necessary food, like wheat, potatoes, and meat. It is far more valuable as an energy-producer than any one of those three; and while, possibly, no better than sugar, it is more easily assimilated and has flavor.

In order to speed up, the beekeeper should be prepared. That means he should have his equipment ready, and what additional supplies he needs ordered early. A little later on there will be a greater congestion of freight than now, and it is already bad enough. As freights are slow, the beekeeper will do well to buy of his nearest dealer in order to save long hauls. If he has not already made up his bill of requirements he should do it before the next mail goes out. And even then his supplies may not arrive any too early. The beekeeper who defers

*The per capita consumption of sugar is about 90 lbs. in the United States.

ordering for a month or two may get his supplies too late for the season. As the war continues, the congestion of freight will be even more acute; and supplies delivered as late as April and May may not give the beekeeper time to nail them up and have them ready.

As to what goods he should order, we may be able to give a hint. The demand is going to be ten to one for extracted honey as against comb. Yes, it may be even a hundred to one. While comb honey will bring a higher price than extracted, there have been some instances where extracted has brought as much or even more. It is well to bear in mind that comb honey in large lots must be sold before freezing weather sets in. Extracted can be sold at any time of the year, thus enabling the producer to get the best price available for the whole season. Comb honey is not in demand for export, while extracted is. So we would say to the large producer who expects to sell in a large way, when you make up your bill of requirements for supplies, bear these changed conditions in mind. The small producer of comb honey who is assured of a good market at good prices (probably local) should consider well before changing over to the production of extracted honey. This may apply in a few cases to some large producers of comb honey. In either case the beekeeper will need all the bees that he is able to winter. Even if he winters them all, there will be an enormous demand for bees in package form; and the beekeeper who expects to get bees from the South should place his order at once. It is not always wise to buy from those who quote the lowest prices, for the man who quotes too low is apt to be swamped with orders that he cannot fill till too late, and, in addition, may send stock that is dear at any price.

Be sure to specify that bees are to be delivered not later than a certain date; and it may be necessary to enforce this demand by depositing your check with a local bank of the shipper, with instructions not to honor the check till the bill of lading is turned over showing that the bees have been shipped. It would be well to stipulate also that the check is not to be paid unless the bees are shipped on or before a certain date. In most cases the Northern beekeeper wants his bees shipped in early spring or not at all; and this plan of procedure will keep the money in the bank till the bees are on the way and insure good faith on the part of the shipper.



MANY BEEKEEPERS, whose bees have gone into winter quarters with doubtful supplies of stores, are con-

Sugar for Feeding fronted with this very
Next Spring serious question: If
I need it, can I get
sugar to feed my bees?

It will be remembered that last fall the U. S. Food Administration took over control

of the sugar supply and directed that a family could get only two pounds at a time. Very recently the Food Administration has cut the sugar allowance for domestic uses down to three pounds per month per person, which is only a little more than one-third the normal per capita consumption of sugar per annum.

Many beekeepers last fall found their colonies short of food, and, expecting to feed, were unable to do so on account of sugar shortage. The result was they let their colonies go into winter quarters short of stores, hoping that they would be able to get sugar next spring.

The beekeepers who attended the various conventions of state associations recently held expressed considerable anxiety at these conventions as to whether they would be able to get any sugar next spring. Some expressed the fear that thousands and thousands of colonies would die from starvation.

Mr. B. F. Kindig, secretary of the Michigan State Beekeepers' Association, found in his state that many colonies were put up for winter short of stores, and he wrote us, asking us to get in touch with the powers-that-be at Washington, to the end that sugar might be obtained for the beekeepers. Accordingly, we addressed a note to Dr. E. F. Phillips, of the Bureau of Entomology, inclosing Mr. Kindig's letter, suggesting that he go in person before the Food Administration and explain the situation. We gave it as our opinion that every pound of sugar given to the bees would enable them to turn back 10 lbs. of honey; and we hoped that he would explain to the Food Administration that thousands of colonies would die unless they could have sugar the coming winter and spring. As the time was getting late we asked him to wire us the result of his investigation, as we were about to go to press with this issue. This he did as follows:

Washington, D. C., Dec. 16, 1917.

Food Administration, realizing importance of saving bees, have willingly endeavored to help beekeepers to secure sugar in urgent cases reported, but no announcement of this was made, as shortly after Jan. 1 sugar should be generally available. Beekeepers can save colonies by using hard candy or syrup fed on warm days.

PHILLIPS.

The Israelites of old could not make bricks of clay without straw; neither can the beekeepers make bricks of candy without sugar! But, we infer from this telegram that the Food Administration has in some cases directed that beekeepers, who have written, be allowed sufficient sugar to feed their bees. O. L. Hershiser, of New York state, whom we met at the Toronto convention, said he had no difficulty in getting a permit from the Food Administration to get all the sugar he needed for his bees to keep them from starving. All that Mr. Hershiser had to do was to present a letter from the Food Administration to any grocer or wholesale house, who was thereby authorized to give him the sugar he needed.

We have no doubt, from what Dr. Phillips

writes, that others can do likewise in case there should be a shortage of sugar next spring. The Administration, however, feels that there will be no shortage after Jan. 1, altho some high authorities on sugar say this relief cannot come before Feb. 1 or even later.

Claus Spreckels, in an interview before the Senate Committee, declared that 1,323,000 tons more of sugar had been produced this year than last for the world's usage. He seemed to feel that the shortage was due to too much official red tape. However that may be, and it may well be doubted, we have been told time and again that plenty of sugar was going to be available. As a matter of fact, it has seemed to become scarcer up to this time.

If what President Jager has said elsewhere is true, that there is little or no sugar in Europe, when this surplus that Mr. Spreckels speaks of becomes available it will likely be sent to Europe. In view of the crying need of sugar thruout the world there will be a big and constant demand for sugar, and for honey also.

Altho the U. S. Food Administration has not yet declared a policy or method of procedure in furnishing beekeepers with sugar necessary for feeding their bees, yet we believe that this will be done. The governments of both France and Switzerland have attended to providing for the needs of beekeepers in those countries for sugar. It is in no way probable that the United States Government will be so shortsighted as to do otherwise.



WE HAVE TAKEN in practically the entire series of state conventions, comprising Illinois, Ohio, Western New York, Michigan, Iowa, Minnesota, Wisconsin, and Ontario,



The Demuth Method of Wintering

Canada. At each of these conventions we carried along one of those inner cases as described in our last issue, page 921. Contrary to what we had expected, the largest beekeepers believe that there is much in that method of wintering, and thought it well worthy of a trial.

We learned in Michigan of one man who had tried it, and found it to be successful; but his objection to it was the work of packing and unpacking.

At other conventions we encountered the question as to whether a ten-frame colony could be squeezed down to seven frames; and others expressed a fear that it might be necessary to give the bees more room for brood in the spring, before it would be wise to unpack.

Chalon Fowls, of Oberlin, Ohio, to whom we have often made reference, would overcome the last objection by making the inner case capable of holding eight instead of seven frames, as shown in our December issue. He thinks a ten-frame colony could be

squeezed down to eight in the fall, and an eight-frame would leave all the room that would be needed for brood up to the time of unpacking. He admits, however, that he prefers a seven-frame capacity, provided there was a chance to give sufficient room in the spring. It might be advisable for the beekeeper who proposes to winter by this plan next fall to make a thoro trial of both seven and eight frame inner cases, to determine which is better adapted to his needs.



IT WILL BE remembered that some time ago Francis Jager, Professor of Apiculture



Honey and Other Sweets in Europe

in the University of Minnesota, and also President of the National Beekeepers' Association, was sent to

Europe by the United States Government as a deputy commissioner to investigate the Red Cross conditions in Servia. As he speaks nearly all the languages of Europe he was eminently fitted for the job. In our last issue we announced that he was about to return. He arrived home only a few days ago, and we had the pleasure of meeting him at the Minnesota beekeepers' convention where he told us something of the conditions in Europe.

He is now a commissioned officer with the rank of major, wearing the uniform indicating that rank. It would be impossible, he said, in explanation, to go anywhere in Europe without a commission and a uniform. One of the questions we asked was how honey was selling in Europe. In answer he exhibited some samples he brought home of what he was sure was American honey, judging it by the color and taste. He showed a half-pound jar that was selling at 55 cents, and pound jars for \$1.10 retail, and they were very much in demand at that. The honey was of good body and flavor, some of it mountain sage, some of it clover, and some from other well-known American sources.

As to what the nations of Europe are using in the shape of sweets or sugar, he said that the German population had no sugar of any sort, and were using saccharine. This has absolutely no food value, and, we are told on good authority, is a cumulative poison. The allies were using some saccharine, but they had a little sugar at the hospitals and at some of the barracks; but honey was the real sweet* which any one could buy, providing he had the price.

There is no prospect, according to Professor Jager, that the great war will cease for two or three years to come. The conditions there, he says, are indescribable, unbelievable; that we in America know nothing of the

* It should be remembered that Professor Jager was in Europe when there was a sugar shortage. Whether the situation has since been relieved, as would be indicated by the statement of Claus Spreckels, that there was no shortage, we do not know.

suffering and privations thruout all Europe.

He told of one beekeeper, whose name we have forgotten. This man had been driven out of house and home. He gathered together a few bees and established a little apiary. He also built a little shack of a building that he called home, when—bang! a shell struck his premises, tore up his little apiary, scattered the hives right and left, and tore out the whole side of his house. Said Mr. Beekeeper, "Look at those bees. What a mess I have got!" And then Jager significantly remarked, "He never said a word about the damage to his house—it was only of those blessed bees that he lost. That man," said he, "is a real beekeeper, and we ought to make him a life member of the National Beekeepers' Association."

Professor Jager was expecting to go on to Washington within two or three days to submit his report.



SINCE THE ARTICLE on page 10, entitled "Sugar for Feeding Next Spring," was written and printed,

Direct from
the U. S. Food
Administration

we have received from
the U. S. Food Administration a telegram in reply to one of

our own asking just what beekeepers could expect from the Food Administration in case sugar be needed for feeding. This telegram reads as follows:

Washington, D. C., Dec. 21, 1917.

E. R. Root, Editor GLEANINGS IN BEE CULTURE,
Medina, O.:—

Food administration has endeavored to help beekeepers secure supplies of sugar in urgent cases reported. If sugar is not absolutely needed at this time to keep bees alive, would prefer that purchases be deferred. Sugar should be available in sufficient quantities after middle of January or first of February so that beekeepers should experience no trouble securing sufficient quantities to meet their needs.

U. S. FOOD ADMINISTRATION.

While this direct word from the Food Administration to the beekeepers is not specific as to just when and how beekeepers can secure sugar for feeding, it implies clearly that their sugar needs will be met. With the expectation that the sugar shortage will be relieved within a month, the Food Administration asks only what is reasonable in suggesting that beekeepers at this time defer their sugar purchases just so far as possible. Don't buy sugar for feeding until absolutely necessary—then the U. S. Food Administration will help you.



IN OUR November issue, page 830, we mentioned some of the difficulties in getting queens thru the mails

Queens for Export
Not Fumigated

to foreign countries,
and how successful
shipments were below

the average of a few years ago. Among other things it was suggested that perhaps

the fumigation of mail matter to foreign countries to prevent the spread of disease in the human family might be the reason why the percentages of losses were greater than formerly. We took the matter up with the Postoffice Department at Washington, inquiring whether packages of queen-bees to foreign countries were fumigated either before leaving this country or on arrival at point of destination. The following letter from the Department will explain:

Second Assistant Postmaster General,
Division of Foreign Mails.

Mail-sacks are not subjected to fumigation at this office previous to despatch to foreign countries, and, as far as is known, no disinfection occurs at destination. It is believed the death of the bees may be due to detention of mails abroad, probably while awaiting examination by censor. J. G. PATTEN,
New York, N. Y., Oct. 26, 1917. Postmaster.



JUST AS WE go to press with the last side of the last form we receive a letter from

A. I. Root, now in
Florida. He, as our
air ("free as
air") for Run-
ning Automobiles

readers will remember,
has been working on
the possibility of mak-

ing the trade winds of Florida drive his automobile instead of using gasoline. He has been having some extensive correspondence with the Wind Electric Co., of Wyndmere, North Dakota, that builds windmills for charging storage batteries large enough to drive an electric automobile. The result of this correspondence is shown in the letter below.

On this 18th of December I have just received a telegram to the effect that my electric windmill for charging the batteries of my electric auto will be shipped at once from Wyndmere, North Dakota, and that the inventor will come with it to see that it is properly installed. Of course I am happy. I will tell you about my garden and chickens later.



J. W. TINSLEY, Ames, Ia., at the Iowa convention, reported that he had tried painting

hot wax on the sur-
face of full sheets of
foundation in brood-
frames, and that he

had found the result to
be very satisfactory. He had tested out
both painted and unpainted, and found the
former showed no stretch of comb in drawing out. He uses enough hot wax to make the sheet weigh about 50 per cent more.

Considerable discussion followed, some of which showed that this method was rather wasteful of wax, at present high prices; and that the use of more horizontal wires near the top of the frame would prevent all stretch or sag. Beeswax is expensive; and if we can prevent sagging by any scheme of wiring we are that much ahead, because fine wire is inexpensive. Moreover, a frame well wired will hold the comb in place, no matter how much rough usage it may receive in shipping or in the extractor.

EDITORIAL ANNOUNCEMENT

A Boiled-down Summary of the Valuable Points in my Life and in Gleanings in Bee Culture for the Past Fifty Years

Perhaps I should explain to our readers that Huber has been hard at work with me in making the material for a book that will contain a review of my life and the problems in bee culture that have been thrashed out during the past 50 years or more; for we have included the writings of "Nov-ice," as I was called at that early day, taken from the American Bee Journal where they were published several years before Gleanings was started.

Between 1873 and 1876 I made many experiments in regard to feeding. I even went so far as to feed a whole barrel of sugar to a colony—of course late in the fall after honey had ceased to come in. I also, at the same time, made experiments in chaff packing, and brought out what I called my chaff hive. It was during these early days, too, that I was making experiments with the first all-metal honey-extractors and the "one-pound" sections.

Below is a sample of some of the conclusions that I came to at that early date. I give place to it here to show how my whole

mind was focused on the bees. You see that even then I was advocating the let-alone plan.

"Of all the blunders in bee culture, I feel that there are few greater than fussing to get the honey out of combs where it is nicely sealed up, and then fussing still more to get it back again in the same combs. I would even give up feeding whenever possible. Why, just think of it! the best colony in my apiary in the spring of 1876 had not had one minute's time expended on it for the previous six months. At that rate one person could take care of a thousand hives until the time for surplus honey comes."—Gleanings, p. 130, 1876.

At the present time I cannot tell you just when the publication of this story of my life and work will be begun. It will be printed serially in Gleanings first and then brought out in book form. You may rest assured, however, that as a book it will be offered very low (considering the amount of valuable matter) to the readers of Gleanings.

A. I. ROOT.



A. I. Root reading the last pages of his autobiography in November, 1917.

IN these columns we have frequently mentioned the Long Idea hive as used by the late O. O. Poppleton, of Stuart, Florida—a hive that

has 24 or 30 brood-frames all in one story. The advantages of this hive have been pointed out—it has a large capacity, and during the season there is no heavy lifting of supers such as one encounters when running a three-story standard Langstroth hive on the tiering-up principle. It will be remembered that Mr. Poppleton used this hive because, as the season progressed, he could expand the brood-nest without putting on upper stories, so that during the entire extracting season it would not be necessary for him to lift anything heavier than a brood-frame or a hive-cover. A number of writers have suggested that this big horizontally expanded hive with only one story would be excellent for wintering. All that is necessary is to select in the fall of the year the heaviest and best combs, contracting the brood-nest down to about eight combs. These are then put into an eight-frame hive-body or an inner case set lengthwise in the big horizontal hive as shown in Fig. 1. A suitable bridge or covered runway connects the inner and outer entrance which may be at the side or the end. The illustration, Fig. 1, shows the entrance at the far end of the hive.

INEXPENSIVE WINTERING

An Ordinary Hive Packed Inside of a Long Idea Hive; also a Regular Hive on End, Inside of Three Supers

By E. R. Root

An ordinary super-cover covers the inner hive, then packing material is poured between the outer and inner hive. There must now be provided a shallow

super made of cheap lumber to go on the top of the outer hive, and to hold the packing on. (See Fig. 2.) This gives us a colony well packed in a double-walled hive; and beyond the shallow rim, to hold the packing on top, there is no other equipment required provided one already has eight or ten frame hives. If he does not have these, he can make an inner case. In either case the expense of packing bees is very small.

The colony can be left in the inner hive till late in the spring or until the bees begin to need room, at which time they can be unpacked and the inner hive removed, when the frames are turned around the other way and additional combs given. The outer entrance and the outer appearance of the hive remains just the same.

With this hive, the beekeeper is in a position to expand the brood-nest as much as he pleases during the entire season without any heavy lifting—a feature that will be appreciated by women and older men who cannot very well lift the heavy supers of the ordinary ten-frame hive.

We are trying some colonies on this plan, and shall be able to give our readers a report next spring.



Fig. 1.—Long Idea hive serving as a winter case for a single-walled eight-frame hive.



Fig. 2.—Front view of the Long Idea hive with an extra rim set on to hold sufficient packing.

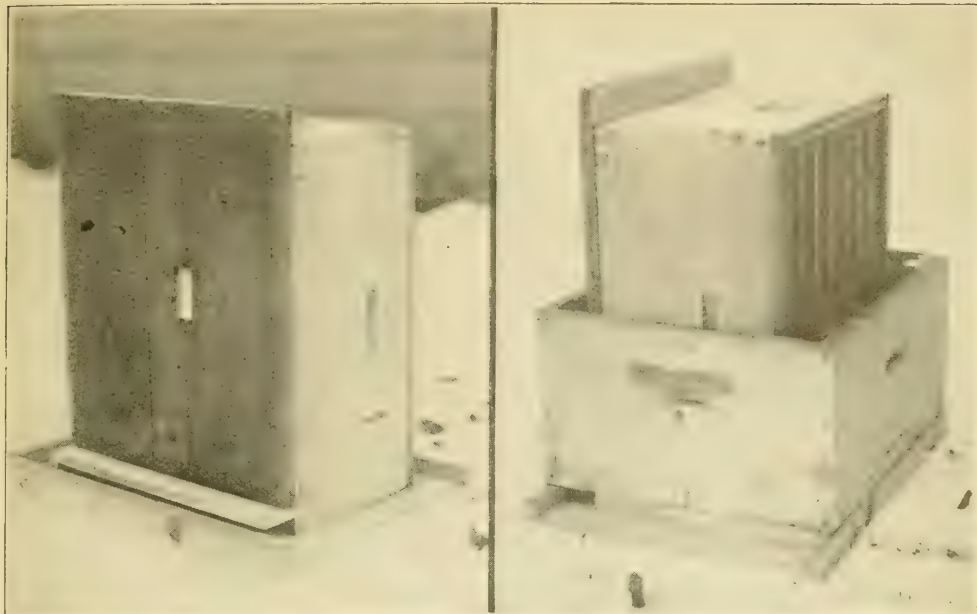


Fig. 3.—Ten-frame hive standing on end with a super-cover tacked on the bottom and a queen-excluder on the top. Before nailing, the super-cover is slid up enough to make an entrance at the lower end, then a cleat is nailed on as shown, to support the packing.

THE MODIFIED DEMUTH PLAN OF WINTERING.

At the Ohio state convention at Lima, the secretary, Ernest Kohn, after hearing our description of the Demuth plan of wintering as illustrated on page 921, December, asked why we needed to have a special inner case at all; he mentioned using an eight or ten frame super and standing it on end in another hive-body in such a way that it would leave a packing-space on the sides and one end. What he was driving at will be more clearly illustrated in Fig. 3. His idea is that without making any special device or inner case, one may utilize the material already present in a well-regulated extracted-honey apiary. On coming home we arranged the combination as shown in Fig. 3. The brood-nest was lifted off its hive-bottom and an empty hive-body put on in its stead. On the top of the brood-nest was tacked a queen-excluder, after nailing two 5/16 inch cleats between the excluder and the frames to hold the latter in position. See Fig. 4. The bottom of the hive-body was covered with a super-cover or bee-escape board made to project beyond one end about two inches, and then tacked in place. The purpose of this is to provide an entrance way to the bottom of the frames so the bees can get out. At the sides and top of this opening was tacked a strip of wood to prevent the packing from closing up the inner entrance. The whole thing is then placed on the regular bottom-board and then shoved tight against the front end of the hive so that the frames are standing on end and crosswise of the outer hive.

Common forest leaves are now packed in around the sides and back of the inner case now on end. Another hive-body is then put on, and more leaves packed in. Last of all, another hive-body or a shallow super is put on top. This is likewise filled with leaves.

It will be noted that Dr. Kohn's scheme of wintering requires no other equipment than that found in the regular extracting apiary. If one had an extra super-cover he would not need to use the queen-excluder; but the queen-excluder will hold the packing away from the top of the frames just as well, provided leaves are used. The excluder would not be satisfactory if sawdust or fine shavings were used.

We see no reason why this scheme of packing should not be very satisfactory for wintering; but in order to get the best results, the super should be placed on end about the first part of September so the bees may begin forming their winter case.

There is one serious objection to this method of packing. It is impossible during the fall or spring to get at the inner brood-nest for the purpose of seeing the queen and the amount of stores, unless one unpacks the whole hive.

In the fall, this trouble might be avoided by using the super-cover, at the top and bottom of the inner hive before standing it on end. Then the bees could be left unpacked until cold weather. Just prior to this the inner hive could be lifted out, stood up in its former position, and the frames examined.

It should be noted that the entrance pas-

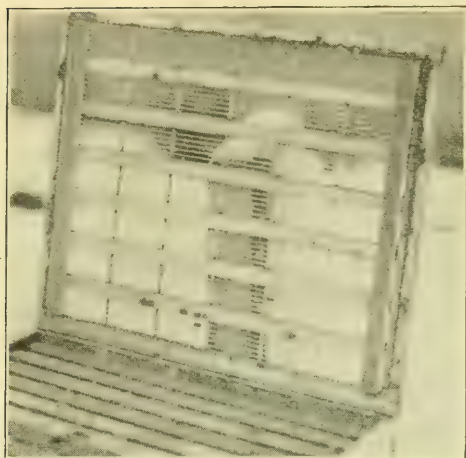


Fig. 4.—Before nailing the queen-excluder on the hive two cleats are tacked across to hold the brood-frames in position.

sageway of a hive packed thus will be rather devious, for the entrance of the inner hive is opposite the side of the outer hive. The bees will go in at one corner, pass along for a distance of a few inches, and then turn to the right under the frames now stood on end.

Whichever of these two methods is used, we should be glad to see tried out in different localities this plan of wintering with frames on end. The first allusion we find to this style of wintering is by Moses Quin-

by in the *American Agriculturist*, p. 447, Dec., 1870. The following is the plan as there given:

"For the benefit of those using the Quinby hive, or any other hive in which the frames are supported by the bottom-board, I wish to say now that they may be arranged for winter with but very little trouble, and combine all the advantages of the straw hive, with many others, for outdoor wintering. First, prepare the bottom-board by securing ventilation thru it in such a manner that it will not become obstructed by any dead bees that happen to drop. Then arrange a passageway for the bees from near the center to the outside entrance. Next get out a strip, one inch by $1\frac{1}{2}$, one foot long, and nail a strip of hoop iron on one edge, projecting $\frac{1}{4}$ inch. This will support the frames in the same manner as usual. Lay this across the bottom and set one end of the frames on it, hooking fast to the hoop iron, keeping the same relative position of combs, and all the frames will stand just the other way—across the hive—and be about four inches from every side of the hive. Cover the top of the frames with canvas, and then fill with soft straw, hay, or chaff, or even dry sawdust, closely packed, even full. Open one of the ventilators near the top, and all the moisture will pass so very slowly thru the straw that most of the heat will be retained near the bees; and if they are in good condition to start with they will be not only safe but very comfortable all winter."



WE have now used the Long Idea hive for a sufficient time to make us quite certain that we shall like it. Two hundred and fifty colonies is the greatest number we have ever had; but we should like to have three hundred in this style of hive next summer.

When the queen is old, and the surplus combs contain drone-cells, we are obliged to use excluders. Ordinarily we keep the brood-nest in the center of the hive, use two division-boards, and give the colony room whenever needed. It is always easy to give more room, as there are thirty-two frames, $1\frac{1}{2}$ inches from center to center. Near the close of the honey season we shift the few remaining combs of brood and honey and give the bees a comb to catch any last dribble of honey that may be gathered.

We do not attempt to produce much comb honey with this hive, altho it is possible to do so by using wide frames to hold the sections and keeping one frame of foundation

250 LONG IDEA HIVES

*Some of the Advantages of Hives
Capable of Horizontal Expansion
Compared to Standard Hives*

By Freeman E. Reeder

still a question, altho we think we are better prepared to handle this problem with the Long Idea hive than with one that must be tiered up. We certainly are saved a great deal of heavy lifting. With our old hives, giving room in the spring always used to bother me; but not so with these hives in which one or more combs can be given at pleasure. The inside covers are in three parts; and it is a simple matter to give them ventilation above. In addition to the ventilation we find young queens and plenty of comb room helps to keep down swarming.

Unless we were able to move our bees we should be compelled to go out of the business entirely. We have found an easy way of moving, even with this size of hive. Before the time to start, the bees are prepared by

next to the brood. Or if desired a super may be used directly over the brood-nest, and shifted later to one side for the bees to cap.

Swarming is



Long Idea hives with a vengeance. Freeman Reeder, Fisher's Ferry, Pa., has 250 of them in use.

putting the combs with adhering bees into carrier boxes which are set inside of the hive until the bees have settled. The boxes are then screened, the entrances closed, and the carrier boxes are ready for moving. If the hives are made of light stuff it is very easy to load and unload them. One evening we moved twenty large hives on a hay-rack, which seemed just about the right conveyance for this purpose.

Since using the Long Idea hive it has

seemed to us that the bees work differently, and also behave in quite a different manner. We think that they sting less, and that they are driven from one end of the hive to the other very easily and with little smoke.

For wintering we pack the hives. This is short work—two chaff division-boards, one cushion, contracted entrance with stormhood, and all is completed.

FREEMAN E. REEDER.

Fisher's Ferry, Pa.



IN Gleanings, March, page 178, I read with considerable interest that article by Mr. Bartlett, entitled, "From one Colony to 532." Twenty-two years ago Mr. Bartlett started with one colony, and just 22 years ago last May, the first colony I ever owned was bought for me at the sale where all my great-uncle's apiary was disposed of. For the next few years I was working on the farm of 150 acres, and found little time to devote to bees—in fact, it was five or six years after buying that first colony that we definitely decided to try to make a living from bees.

It is a generally accepted truism that "comparisons are odious;" but in so far as I shall do any comparing, the advantage will all be in favor of friend Bartlett, so I think he will bear with me in my comments on his article.

First of all, I would say that the whole spirit of the article impresses one with the idea that the author is an up-to-date business man, with neat and efficient apiaries, and every thing spick and span. The exact number of colonies, "532," shows precision.

FEEDING WITHOUT ROBBING

*Why is there Danger from Robbing
in One Instance and no Indication
of such Trouble in Another?*

By J. L. Byer

Honestly, I am not sure within a dozen or two just how many colonies we have; but I would know on my first visit, if any were "lifted" from an

apiary. Score one against me for carelessness on this point. "I try to keep my apiaries spick and span." I am afraid that I don't do this, or at least I don't try hard enough, for our apiaries certainly are not always pretty to look at.

"Honey-houses in a presentable condition." Here again we plead guilty to not coming up to that ideal; for often in the rush of the season our honey-houses are not in shape to receive company.

"I won't have a leaky cover or old rotten hive." These are sound business principles as claimed by friend Bartlett, without a doubt; but once more I fall down lamentably, as we certainly have quite a few old hives and possibly—no, probably—a few roofs that leak more or less. While it is true that, with over 700 colonies, at least 600 of which are still in the second-hand hives in which they were bought, a fair excuse might be given for having old hives;

yet I do not try to justify their use—what is the use when nobody would treat your excuse decently, even if you made one? In justice, tho, I would say that at least 500 of my hives are practically as good as new, and the other 200 yield just as much surplus per colony as their better-housed neighbors.

Having said all this by way of introduction, I now come to the main point in the article—in fact, the only point that is not at all clear to me. With perfect hives, a uniform equipment, and an excellent manager, why did Mr. Bartlett have trouble with robbing during fall feeding when using the Miller feeder? Dozens of beginners and others have written me on the subject of feeding for winter stores, and I do not believe that I ever cautioned a single one as to any particular danger that might arise from robbing.

For fifteen years at least, we have each fall had to do some fall feeding. Some years thousands of pounds of sugar have been fed. With a mixed equipment in way of hives—good, bad, and indifferent in so far as the state of repair is concerned, and using Miller feeders with square boxes about four inches high holding about twenty pounds each—never once did we have a case of robbing if we except a single case of “peaceable” robbing in the home apiary two years ago. Our Miller feeders hold about twenty-five pounds each; and since we do not have enough feeders at each yard to feed the whole apiary, we generally feed two or more yards at the same time, alternating visits every other day. While we prefer to do the feeding in the evening, yet if that time is not convenient we would not hesitate to feed at any time in the day.

NO ROBBERING EVEN WHEN THERE'S A LEAK.

A few years ago a friend of mine who farmed and also kept quite a nice little apiary, decided to take a trip to Europe. As he would be away till November, he asked me to feed his bees for winter. A fall flow was lacking that season, and much feeding was necessary. Altho busy, I promised to help him out; and before he left he provided all the sugar needed, telling me not to spare it. During a hot spell in September I fed all those bees with Miller feeders, doing the work in the early afternoon, and then going to one of my own yards to feed before coming home. Never was there the slightest trouble from robbing under those conditions, and every colony came out in rousing condition next spring; for, needless to say, I made them heavy enough.

In feeding, more than once I have had feeders leak at first and even run out a little at the entrance. But even then no robbing was ever done—at least I never found a single colony injured in any way. On rare occasions I have had bees get in at the top of the feeder, but this also never resulted in robbing. Truly I am at a loss to explain the difference in this matter, and

would welcome any help in that line. Friend Holtermann once told me that, with packed hives, robbing was less in evidence, as bees are more loath to go thru the passage to the inside of the hive, since the guards have a better chance to keep out intruders. Our experience has been mostly with packed hives until the last few years, during which time we have used the inverted friction-top pail with punctured lid—a feeder that is even better in our estimation than the Miller, which was previously our favorite. As Mr. Bartlett feeds very early in the season, while we cannot feed till September, owing to the fact that the supers are not off till then, I at first thought that the difference in time of feeding might explain his trouble. But this is not sufficient cause; for some years ago, when we thought that there was something to be made in the plan of feeding back extracted honey to fill out sections, we diluted honey and used it freely in Miller feeders, yet no robbing was ever noticed.

With all the bees we have handled, with various kinds of hives, many colonies being bought and transferred into other hives, only once have we lost a colony by robbing, and that was at the Cashel apiary last September. One very warm day in September, we happened to be in the apiary and found in the honey-house half a dozen or so supers taken off after clover flow, which were wet from the extractor and showed signs of moths. Three colonies were each given two of these wet supers, and we left the yard a few minutes later, all being quiet. Two days after, calling at the yard again we found that one hive that had been given two of these supers was completely cleaned out. In fact, the brood-combs were torn to pieces and piles of the riddled combs were all around the entrance of the hive. The two other colonies had not been touched. I can not explain the matter more than to say that this hive was in the extreme corner of the apiary; and because of its being the corner hive attention was given to it by the bees. This was the reason ascribed by E. R. Root when I showed him the hive and told its history. Strange to say, altho the combs were riddled, the queen with about half the bees was still alive when I found them. A comb with honey was given; and, later, four more combs, and then they were fed for the winter. In the spring they were alive but weak.

This article has not been written to criticize Mr. Bartlett in any way, but simply to get some ideas as to why we should have such a difference in results. Are we going to ascribe it to locality, strains of bees, or what? Locality can not have a bearing on the case; and as to bees, I believe we have handled about all kinds—at least all produced on this continent. If there is general danger from robbing when feeding, then all who ask me for advice, I would certainly counsel to be very careful in this matter.

Markham, Ont., Can.

FROM THE FIELD OF EXPERIENCE

Conversations with Doolittle

"Would it be advisable to take up bee culture in preference to some other line of agriculture? In fact, I have quite a leaning toward beekeeping as an ideal pursuit."

Occasionally a man gets "bee fever," and in his haste to get into the business he spends a lot of money foolishly, and does many things which are unprofitable. After he gets nicely started he meets with losses, becomes discouraged, and makes a sacrifice to get out of the business, or else takes up some other business along with beekeeping. Any one who finds himself on the verge of any of these lines of action would do well to ponder a little over the matter before rushing into an untried thing or rushing out again on account of a few reverses. My advice would be to those who have mastered some other branch of agriculture, or some other business, and are doing well in it, not to take up beekeeping for the purpose of making money out of it. It would be better to invest more time and capital in the business you are already in than to take up something new. Talking with a beekeeper some time ago who had been successful in the business, he told me how he had become interested in sheep-raising, owing to the high price of mutton, and thought strongly of starting in the business, as he had some land that was well adapted to sheep; but after more thought and deliberation he decided to enlarge his bee business instead, rather than take up something in which he had had no experience; and having thus decided he found himself possessed of a good crop of honey this fall, which, with the better price, gave him an advantage which he might not have had if he had entered any other business with which he was unacquainted.

The case is different with those who wish to keep a few bees for pleasure or pastime, or as a rest from mental labor. The question has been asked, "Is it best for one to work a season or two with an experienced beekeeper or go ahead and learn by experience?" The school of experience is all right, but the tuition is often exceedingly high. If one knowing nothing about beekeeping is determined to take it up as a business I think it would pay him well to work a season or two with a successful man, even if he has to pay for the privilege. But if this successful man needs help, he is usually willing to pay fairly good compensation for a man who is "handy" and willing to work.

Three items are very necessary in a practical understanding of the business in question—study, observation, and practice. Every beginner should procure one or more standard works on bee culture and study them until he is familiar with the rudiments and

the first principles which must sooner or later enter into a successful career. By observation I mean the keeping of one's eyes open to every little item and making note of what is seen. Practice alone can make a benefit of the theoretical knowledge thus gained. Then comes the question, "How many colonies should a beginner procure?" I started with two and increased only one, as the season of 1869 was a poor one. After a score of years with the bees I became more able to care properly for two hundred than I was that first year to care for the two. So I would say that it depends upon how much one knows about the business and how much time in reading, observation, and practice he has put into it. It is a good and safe way to start with a very few colonies; give them the best care possible, and make them pay for all expenses incident to increasing the plant. Thus, besides the first expense of starting, one is nothing out except his time; and for the loss of time he is compensated by the knowledge gained.

The question is often asked, "How much honey will a colony of bees produce in one season?" It might as well be asked, "How many potatoes will an acre yield?" There are many conditions to be taken into account. To give a sort of general idea, an average of fifty pounds of surplus comb honey per colony each year for a term of years would be considered fairly good returns. If extracted honey, seventy to seventy-five would be a fair equivalent. But this is for the one who has been in the business for several years, and such as occupy favorable localities. As far as individual colonies are concerned I have had yields all the way from nothing up to 309 pounds of comb honey, and from zero up to 566 of extracted, in a single season. Until the price of lumber caused the most of the basswood trees to be cut, my yield in good seasons was about 100 pounds of surplus per colony, spring count, for the whole apiary.

It is well to remember that, as a rule, a small number of colonies can be made to produce relatively much larger yields than a larger number; therefore don't be led to the conclusion that you can make a great fortune out of an extensive bee business because some one has reported making \$20 or even \$40 from a single colony in one season. I do not wish to discourage any one. What I want is to dispel the delusion that there is a "get-rich-quick" possibility in apiculture. Such enthusiasm invests too heavily on the start, and, meeting with severe losses, finds a lot of useless hives and fixtures on hand. I advise going slow at first. Industry and grit will win in this business as in any other.

Borodino, N. Y. G. M. DOOLITTLE.

FROM THE FIELD OF EXPERIENCE

Bird Flowers often Listed as Honey-plants

Bird flowers illustrate well the importance of knowing something about the structure of flowers and their pollinators before deciding whether they are good honey-plants or not. The fact that a flower contains an abundance of nectar does not prove that the bees can gather it. Not long ago I found the cardinal flower listed as a good honey-plant, while about two years ago there was published in *Gleanings* a small picture of the red-hot-poker plant, which was reported valuable by a New Zealand beekeeper.

Hummingbirds, which are found only in the Western Continent, are the only birds which are of much importance in the pollination of flowers in North and South America. The ruby-throated hummingbird is the only species known in the United States; but in tropical America more than 500 species have been described. While they are most abundant in western Brazil, a hummingbird has been seen visiting in a snowstorm the flowers of fuchsia in Tierra del Fuego, and northward they are reported from Sitka. On the Andes Mountains they live at an altitude of 16,000 feet, in a region where there are frequent storms of sleet and snow.

The best-known bird flower in the United States is the cardinal flower (*Lobelia cardinalis*). No more brilliant red or scarlet

hue occurs among flowers. As a rule, bird flowers are always red—a color supposed to be preferred by hummingbirds. The cardinal flower is frequently visited by hummingbirds, which, with perhaps the exception of a few butterflies, are alone able to reach the nectar from the front. The corolla tube is about an inch long; but in the older flowers the petals tend to split apart and become separate. Bumblebees sometimes steal the nectar thru crevices in the side of the flowers. The three lower petals, as the photograph shows, are bent downward where they will not be in the way of the birds when they poise on the wing before the flower. It will also be noticed that the corolla is usually split to the base on the upper side. (Fig. 1.)

There is another species of lobelia called the blue lobelia, or blue cardinal flower, which has blue flowers and is a bumblebee flower—that is, it is pollinated by bumblebees. When the two different kinds of lobelia grow side by side it has been observed that hummingbirds pay no attention to the blue flowers but restrict their visits to the red ones, while the bumblebees pursue the opposite course and visit only the blue blossoms.

The red-hot-poker plant, or flame flower (*Kniphofia aloides*) is a native of south Africa, but is everywhere cultivated. Look at the photograph and note the long tubu-



FIG. 1.—Cardinal flower (*Lobelia cardinalis*). A bird flower.

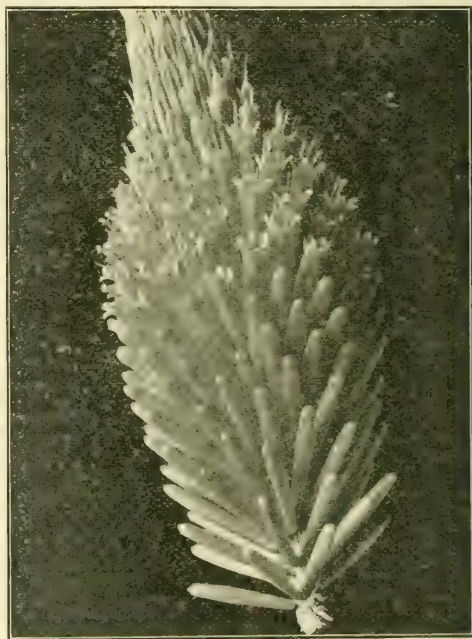


FIG. 2.—Red-hot-poker plant (*Kniphofia aloides*). A bird flower.

FROM THE FIELD OF EXPERIENCE

lar flowers adapted to the long bills and tongues of flower birds. As there are no hummingbirds in Africa the flowers are visited by another family of birds, the sun-birds, which in size, form, and color resemble hummingbirds; but when sucking nectar they perch upon a stem or leaf instead of poising in the air. Nectar is secreted copiously at the bottom of these tubes; but to honeybees it is "forbidden fruit." Sometimes a honeybee literally stakes its life in the attempt to obtain it, and creeps into a tube where it sticks fast and perishes in sight of the sweet booty.

The trumpet or coral honeysuckle (*Lonicera sempervirens*) is clearly also a bird flower. The corolla is scarlet outside but yellow within. From these trumpet-shaped flowers no honeybee can add to its stores. The scentless flowers are pollinated by the ruby-throated hummingbird. (Fig. 3.)

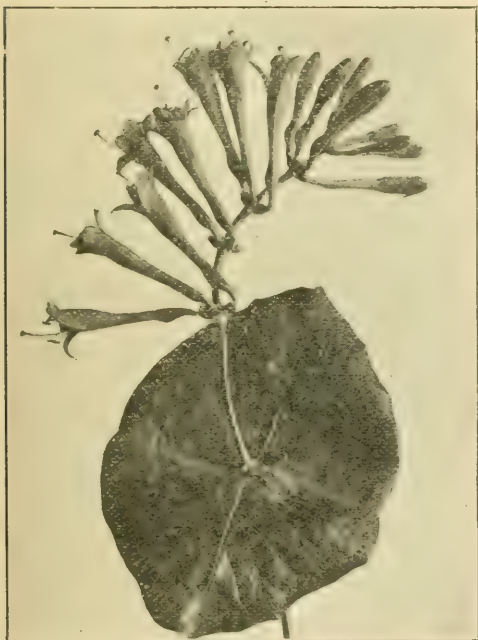


FIG. 3.—The trumpet honeysuckle (*Lonicera sempervirens*). A bird flower.

As we have only one species of hummingbird in the United States the number of bird flowers is comparatively small. Three well-known species are the trumpet creeper (*Tecoma radicans*) with a funnel-shaped scarlet corolla $2\frac{1}{2}$ inches long; trumpet flower (*Bignonia crucifera*), which has a corolla two inches long; orange red, and yellow within; and Carolina pink (*Feiglia Marylandica*), also scarlet outside and yellow within. Several species of scar-

let sage, cultivated from Brazil, also have corollas two inches or more in length, and are pollinated by hummingbirds (*S. splendens* and *S. fulgens*). The wild balsam, or touch-me-not (*Impatiens biflora*) is by some regarded as a bird flower; but it is much more frequently visited by bumblebees than by birds. It is, therefore, a bumblebee flower. The same is likewise true of the wild columbine. Hummingbirds, of course, visit a great many flowers which are not at all adapted to them, as any reader may observe another summer.

In tropical America, especially in Brazil, hummingbirds are so numerous that they play an important part in the pollination of flowers. The majority of flowers is visited by them; and as they are on the wing thruout the year there are times in the rainy season when they are almost the only visitors. Bird flowers are much more abundant here than in North America. Besides feeding upon nectar, hummingbirds, contrary to the general belief, also feed upon small insects which they find about flowers. The hermit hummingbirds, indeed, live wholly on insects. It was the search for insects which first led the ancestors of this family to examine flowers, and, later, to become nectar-feeders.

Hummingbirds (Trochilidae), which visit highly colored flowers, exhibit the most brilliant and varied hues to be found among birds. They have not unfittingly been called bird jewels, for they display all the vivid iridescent crimsons, yellows, greens, and blues found in precious stones; and in the sunlight they glow with a metallic brilliancy that defies description. Sometimes a single species exhibits three or four colors. The habit of visiting flowers seems to have given rise in some indirect way to this brilliant coloration. In Africa and the East Indies flowers are visited by sun-birds (Nectariniidae), which closely resemble hummingbirds, but are an entirely different group of birds.

Waldoboro, Me. JOHN H. LOVELL.

The Other Side to Florida Beekeeping

During the last few years I have had many letters from beekeepers of northern states asking for information relative to conditions in this part of Florida. Many come to investigate; a few have called upon me, and have seemed disappointed because I would neither offer them encouragement nor point out locations where success in beekeeping would be assured. They cannot understand that location is everything in Florida, and that a distance of five miles, or even two, may bring conditions which will make for success or failure. The state ranks high as a honey-producer in the government

FROM THE FIELD OF EXPERIENCE

crop reports; but these reports should not be considered as a standard of production, for the figures are made up principally from the reports of large producers in especially favored sections; and the reports of others who speak loudly of their successes, but never of their failures or small returns. We must not forget the tendency of the people to "boost" Florida without regard to the fact that very many of those who are "boosted" into Florida are in a short time found not among the "boosters" but the "busted."

The bee-journals also are to blame; for in them one finds nothing but reports of big crops and mention of "ideal locations" in vast areas of palmetto or other forage unoccupied by beekeepers. I do not think it possible for any one to be certain of a good location until he has kept bees on it for several years. Of course, this is not true for the migratory beekeeper, who is not tied down to one location. That phase of beekeeping I cannot discuss at present, tho I believe there are great possibilities in it. But the letters I receive, and to which this is my answer, are all from men who wish to keep bees in the same place the year round, and who seem to think that here in the land of "Florida sunshine," with no wintering problems, we have a regular bee paradise.

Have we? Yes, during a good flow from orange; at other times, most emphatically, No!

I am speaking of this immediate neighborhood—the orange country around Orlando, and the conditions found here are common, with certain locality modifications, in almost all of Orange and Lake counties. Of course there may be a few favored locations where conditions are enough better to prove the exception to the rule. Perhaps DeLand is one such, for we hear nothing but good from that place; but, taken as a whole, my remarks will hold good for most of the orange locations in middle Florida.

Many beekeepers are attracted by thoughts of making big crops of orange-blossom honey, and there are certainly very many splendid locations near large areas of citrus groves which are entirely undeveloped by our beemen. But, Mr. Northern Beekeeper, go slow if orange honey is what you are after, what you hope for, and figure on for your main support. It is our main support, and we have made as much as 150 pounds per colony from it. But how many paying crops have we had since the freeze of 1894? You can count them on the fingers of one hand. Orange honey is our main support; but it is such an unsatisfactory support that one who leaves a clover or other location to engage in beekeeping in the orange belt of middle Florida is building his house upon the sand in more senses than one.

We have no wintering problems, it is true; but we have something much more serious—the problem of keeping our bees alive and in good condition during the summer, when wastage of bee life is enormous. You in the North reckon 17½ to 20 pounds for winter stores. We must have 35 to 40 pounds. This last winter I left 45 to 60 pounds of stores for each colony and it has been little enough.

Let us take a normal season and see how we may expect to fare. Early in January a little nectar will be gathered from the maple, and pollen from the short-leaf pine. In some colonies a small patch of brood will be started. Then there will be two or three weeks of inactivity until the jasmine, mock orange, and huckleberry open in February. By Feb. 20 a little orange honey should be coming in; and by the first of April we will suppose that we have a crop of, say, 75 pounds of orange honey in the supers. Let me reiterate my warning here to go slow. You must not look upon this 75 pounds as surplus, altho you may give it as such in your government report and in communications to friends and bee-journals. You must look well ahead, for now is the time when you may lose your bees by starvation. Every colony will be boiling over with bees; there will be at least eight frames of brood, and we must feed these superlatively strong colonies until about May 15, when saw palmetto and gallberry begin to bloom.

How much of this 75 pounds of surplus shall we leave? If the brood-chamber is well supplied—containing, say, 20 pounds, I leave 30 pounds in the first super, and all scattered honey above that, and consider myself safe until palmetto bloom. Saw palmetto and gallberry should bloom from May 15 till early in June, and usually furnish enough to supply all needs until July 1. I say usually, because here again crops up one of our problems—forest fires. When palmetto is burned over in January or early in February little harm is done, for it will still bloom profusely; but when burned in March and April, as has happened for several years in this locality, there will be no bloom that season. During 1915 practically every patch of palmetto within range of my bees was burned during a dry spell in May, and, as a consequence, I had to feed 2300 pounds in addition to the 30 pounds per colony left in April.

If we can keep our bees alive until July 1, we are safe; for then the partridge pea will be yielding, and, altho we obtain surplus from that source only once in three years, it, together with cabbage palmetto and "purple top," will keep things going until September. Last year was exceptionally good for partridge pea, and I secured a fair surplus from it, my bees going three

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miles to it, over an entirely barren country. Partridge-pea honey is not "always dark red, of strong taste, and altogether undesirable as a table honey," as stated by Prof. Baldwin in *Gleanings* for October. He evidently gets his honey mixed. I do not know what the dark-red honey comes from, tho I get some of it; but I do know that partridge-pea honey is a very light amber from the high-bush variety, and a little darker from the low bush. It is also of good flavor when thoroly ripened.

During September there will be little done, tho the bees should find enough to keep themselves. In October we always have a fall flow from many varieties of flowers, the names of which I cannot ascertain. The "whiteweed" is, perhaps, the most valuable, for, if conditions are favorable, it will yield not only an abundance of winter stores but a surplus of white honey as well. The prospects of a crop from this source were never better than in 1916, and by October 12 the yard sounded as it does at the height of an orange flow; then came three cold days followed by a week of rain, and the bloom was over. We got enough for winter and no more.

Apopka, Fla.

HARRY HEWITT.



Annual School for Beekeepers, Dalton, Massachusetts

The opening day of the beekeepers' school last summer was a stormy one; but as the program for that day consisted of indoor work, the storm was almost forgotten. It was apparent to all that Dr. Gates was an expert. Altho the first day was devoted to beginners, there were many old beekeepers present who also learned a number of profitable kinks.

The first thing taken up was the subject of hive construction and inside furniture. This brought out a great deal of discussion, and numerous ways of cutting foundation

were shown. C. M. Musgrove, of Pittsfield, Mass., brought a miter-box into play and showed his method of cutting a good many layers of foundation at one stroke of the saw. His saw was an old one with the teeth filed in such a way that it left a good smooth cut.

Dr. Gates has a good and rapid method of wiring frames. A spool of wire is placed on a block in an upright position, the wire being drawn against a nail to take out all the curves and prevent it from kinking and snarling; in fact, it can be laid down on the table like a piece of string. A vise is fastened to a long table, while the block holding the wire is fastened by a clamp 49 inches away from the vise. A frame is placed upside down in the vise, and is so placed that it will be held at the center of the top-bar; the wire is started thru the second hole from the top, passed thru the opposite hole, up to the top one, then to the opposite hole toward the wire, where it is now fastened to the end-bar. The wire is cut off close to the spool, the spool being such a distance away that, when the wire is cut in this manner, it leaves enough to finish wiring the frame.

In placing the staples in the brood-frames, Dr. Gates uses a block similar to the one usually sent out by manufacturers; but the slot which guides the staples is cut in a line oblique to the one we commonly see and thus the end-bar is prevented from splitting.

The second day the beekeepers met at the home of Harry E. Hume, and "The Swarming of Bees" was the first topic on the program. Dr. Gates waved his magic swarm-box in the air, and, sure enough, a swarm appeared (even on that cloudy day); but it was down the road at the home of another beekeeper, where Mr. Gates soon gave us a fine demonstration on "how to handle a swarm."

The rest of the day was spent at Mr. Hume's apiary, where we were shown some fine comb honey and the method of producing it. The subject of "queen-rearing" was



Dr. Gates illustrating methods of putting up honey for market.



An apiary is the best place to teach bee culture.

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taken up in the afternoon, and Mr. Hume had some fine queen-cells to exhibit, Dr. Gates giving a demonstration on how to produce them.

L. D. Case, of Pittsfield, took up the subject of requeening, and the merits of the different methods of introducing were discussed.

The apiary at Flintstone farm, Dalton, was the place visited the following day. The weather was ideal for apiary work. Ralph Ely and B. Ankar have charge of the bees and fruit, and both young men seem well adapted to the work.

From samples of honey purchased in Pittsfield Dr. Gates demonstrated how honey should be put up for market.

Messrs. Ely and Ankar gave a demonstration of extracting and bottling honey, and Mr. Ely also gave a short talk on the value of bees in the orchard, and showed us where clover had come into the fields near by—an occurrence which he attributes to the fact of having the bees on the place.

The writer had to leave Dalton the following day, much to his regret, so could not take in the program for Saturday; but we know that the demonstrations and discussions of races of bees, transferring, wintering, and bee diseases must have been fully as entertaining as those of the three preceding days.

Such outings as these are of inestimable value to all, and we should have more such chances to get together and exchange ideas.

Berlin, Conn. A. E. CRANDALL.



Workingman's Playground

Altho working six nights every week on a Rochester morning newspaper, I am able to utilize my spare hours of daylight in

recreation, working among my bees, at the same time making considerable profit.

This apiary is situated just outside of the city of Rochester and is run for both comb and extracted honey. The main flow is from clover. The comb-honey supers are first put on, followed by full-depth extracting-bodies. Thus the main flow is secured in comb honey with very few unfinished sections, and usually there is a good percentage of extracted clover honey also, all of which is sold in the home markets.

Besides looking after this apiary, I act as apiarist for several of the large gardeners about Rochester, who need the bees for fertilizing the cucumber plants in the green-houses. As the garden district (Iron de quoit, "The garden spot of the world," as it is known) is made up of vegetable crops and fruit, there is no pasturage for the bees after fruit-bloom, and, consequently, a good deal of feeding has to be done. This section is north of the city, along Lake Ontario.

My apiary is about twelve miles south, surrounded by grazing and general farming land. In connection with the apiary, queen-rearing is carried on for the benefit of myself and local beekeepers. There are many colonies kept in the city, and almost every year a strong swarm will cluster on the trolley wires in the business district, causing quite a sensation.

This seems to be a good deal of work for one man to handle; but as I follow up my comb-honey supers with extracting supers, and raise the hives up from the bottom-board, allowing a free circulation of air, swarming is held in check. With the aid of a light motor truck I am able, within 12 or 20 minutes, to reach my bees in either direction. While being kept rather busy, I consider it fun and recreation to work with the bees.

Rochester, N. Y. W. H. HARBER.



Apiary of W. H. Harber near Rochester, N. Y. Mr. Harber works six nights a week on a daily newspaper and cares for his bees during spare time thru the day.

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The 400-colony apiary of E. J. Stahlman, Knox, N. Y. At this apiary Mr. Stahlman has a bee-cellar above the ground.

The Bee-house and Apiaries of E. J. and P. W. Stahlman

During my visit at W. D. Wright's, of Altamont, N. Y., he was kind enough to take me to the apiary of E. J. Stahlman. The apiary of 400 colonies is situated near Knox, on a splendid state road some distance from Altamont. When we reached there we found Mr. Stahlman and his brother building an above-ground bee-house with a sub-earth ventilator.

The floor of the house is of concrete, and

of vitrified tile with a double air-space in them. These air-spaces are intended to prevent outside temperatures from influencing the temperature in the house—in other words, to insulate. In general I do not have a very good opinion of an above-ground bee-house, intended as a wintering-place for bees; for the often rapid variations of atmospheric conditions have such an influence upon the temperature of the room, while with cellars the temperature of the soil about the cellar walls changes but slowly. Still, what almost reconciled me to this cel-



The Stahlman queen-rearing yard of 50 nuclei.

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lar, and placed it away ahead of any beehouse I had ever seen, was the ceiling to the place. He has something along this line that is valuable and unique. There are the usual joists to which to attach a ceiling; but instead of the usual inch lumber there is fine poultry netting, and, resting on top of this, forest leaves to a depth of 12 inches at the sides and about two feet toward the center. It will be readily seen that in this way the moisture from the bees will pass thru the leaves, a maximum of heat be retained, and yet the bees will have a moderate and gradual change of air without any pronounced current. There is a sub-earth ventilator which brings in fresh air. Such a ceiling could be applied in various places on the farm, such as poultry-houses and pig-pens, where in winter I have often noticed a damp and chilly air, which is quite injurious to animal life.

From Mr. Stahlman's we went to the home of his brother, P. W. Stahlman, who is also a thoro beekeeper, and one who can relate some interesting experiences on selling honey. He strongly advises that a man should know something about the one to whom he sells honey.

R. F. HOLTERMANN.

Brantford, Ont., Can.



Power Machinery for Home-made Supplies

During the summer of 1912 it was my privilege to be with a professional beekeeper in the central part of New York. One of the first questions asked after my arrival concerned supplies. Whether one using as many supplies as my employer, should buy them all from the regular manufacturers was, it seemed to me, an important question, and I was not surprised to learn that by far the greater part of the hives and fixtures were made at home. A gasoline-engine and power saw were utilized, and it was not long before we had a fine lot of frames, covers, and bottom-boards. While they were not as smooth as most goods from the factories, they served the purpose fully as well. During the season I observed that the engine was often used for other purposes. The saw also came in handy for many jobs not directly connected with the bee work.

The season of 1913 was spent at home on my father's farm. It was my desire to increase my small apiary, and I needed hives. There was plenty of lumber available—pine of good quality—so the problem was only to reduce my lumber to hives. After some consideration a 4-horse-power gasoline-engine was purchased, together with a mandrel and the necessary saws and belting. Before

the bees began work I had 80 hive-bodies, 60 covers, and as many bottom-boards ready. The engine was used to cut wood and to do any other work within its province about the farm.

For my first hives I bought the frames from a supply house because I wanted Hoffman frames and was unable to make them. The following winter I decided to dispense with self-spacers, as I felt that the cost did not justify their use. So I cut out 2000 frames for the 200 new hive-bodies. At the retail prices asked by dealers my frames alone would have cost me \$70. Aside from the material, which cost only the labor of getting out, my only expense was for gasoline and oil. The work was done during the winter when time was the least valuable.

I am fully aware that some of our best beekeepers do not advise making supplies, and it is quite evident that for some to do so would not be good policy. If one needs only a few hives or fixtures it would surely be poor economy to buy an expensive equipment for their construction. Or where material is scarce, and high in price, little could be gained. Unless the beekeeper needs many supplies it might be a poor plan to invest in machinery for which there is no other use; but on many farms an engine and saw would pay well, even if they were not badly needed for bee-supply work.

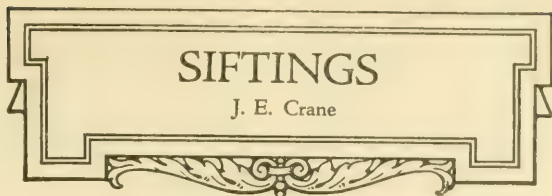
The cost of the proper equipment varies. For my engine I paid \$90 and the freight. The saw-table I made at home. The mandrel, saws, and other irons were purchased at a cost of \$16. With this machine I have been able to get quite satisfactory results; but I would not advise any one to make his own table if he can afford to buy an iron one, such as put out by some firms making a specialty of wood-workers' supplies. The iron tables are far more accurate; they vibrate less, and will give much better service in every way. Accuracy is the most important feature. It is of the utmost importance to have all fixtures interchangeable; and to do so with any ease, well-made machinery must be used. Factory-made tables cost from \$50 up. Second-hand machines can sometimes be procured very reasonably.

Lumber values vary greatly with locality. Here material for hives of Langstroth depth costs from \$30 to \$50 per 1000 feet, depending on quality and condition. I was offered white pine, unplanned, 10 inches wide, for \$30 per 1000. I had to haul it ten miles to a planing-mill and pay \$2.00 per 1000 for having it planed. For frames one can utilize short pieces, scraps, etc., that might otherwise be of little or no value.

West Danley, N. Y. RAY C. WILCOX.

[To make sure of the dimensions, one who makes his own supplies should have a factory-made outfit for a sample.—Ed.]

DR. MILLER, p. 693, September, quotes from the British Bee Journal some statements in regard to the length of the life of the bee, and inquires, "Do we know positively anything about it?" Yes, sir, doctor, we do. But we don't know all we should like to. If we introduce an Italian queen to a colony of black bees in summer we shall find our black bees last just about six weeks from the time the last black bees hatched. But there is doubtless a great difference in the length of their lives, depending on the weather, the abundance of nectar in flowers, and the distance they have to fly, the wind, and perhaps other things.



SIFTINGS

J. E. Crane

E. G. Baldwin informs us, p. 786, October, that at last they have American foul brood on the east coast of Florida, and considers F. Dundas Todd's article in the American Bee Journal as both "timely and refreshing." I consider his method of combating this particular disease quite out of date in this part of the world. I am not denying that his scheme of cremation is a sure remedy for every colony treated. So is burning a barn to rid it of rats a sure cure. But why all this waste? The editor of the American Bee Journal advocates saving the hives, we are told; but why not save the combs and render them into wax?

Mr. Todd claims to be able to cremate ten hives in an evening. These combs, if worked up into wax, would be worth ten or twelve dollars at the present price of wax. If there is honey in the hives it can be saved. Combs that have been melted and boiled for making wax can no more spread contagion or disease than the ashes in the pit in which the hives and combs have been burned. Of course, if there is only a single hive it might not pay; or if there is no place where the wax-rendering can be done it might not be wise to attempt it.

On page 855 the editor seems to think that an opening in the upper and also in the lower part of a hive does not give as good ventilation as only one opening. I believe, Mr. Editor, your reasoning is not correct. I believe that the ventilation of a hive is quite different from the action of a pump. If bees at the entrance are fanning so as to draw air out of the hive it matters little whether any is forced in at the entrance or not if there is an opening above where it can enter. It is not necessary that a tube thru which water is forced should be bent so that the inlet may be near the outlet. It may be located at the opposite end of the reservoir. Our own experience is the same as Dr. Miller's, that bees keep cool quite as well or better when given upward ventilation or an opening above the bees.

The papaya-tree illustrated on page 866, November, is a most interesting plant. It is sometimes called a melon-tree, which makes it more easily un-

derstood by those who have not seen it. It grows upright, a single stem usually, the leaves looking like gigantic watermelon leaves, while the fruits look something like a small greenish-yellow squash. When cut in halves the flesh resembles a muskmelon, containing a hollow cavity filled with a soft pulpy juice and dark seeds, somewhat like watermelon seeds, only smaller. These trees grow wild along the coasts of southern Florida, but the fruits are inferior to those cultivated in the West Indies. [See page 43.—Ed.]

Dr. Miller, you state that I said, page 771, I "don't worry if my bees have sugar and pollen." No, doctor, those were not my words. What I did say was that "we get along very well by supplying any lack of winter stores with sugar syrup." Usually our hives will have fifteen to twenty pounds of honey by the middle of September. As they need thirty pounds or more to winter we feed sugar syrup, which is mostly consumed during the winter. So you see we have no need of worrying, as they get along nicely with warm weather and plenty of pollen, even if they have to use some sugar with their honey in the spring.

I was in Connecticut in September, and found some of the best beekeepers of the state were enthusiastic in their praise of the section hive containing shallow frames above and below. My son was recently in the northern part of this state, and the best beekeeper of that section was likewise greatly pleased with the sectional hive. With such hives I am sure shallow extracting-frames would no longer be a nuisance, first class or likewise; but really I don't like two kinds of frames or sections in the same yard.

Those were unusually open-minded officials in the city of Huntington, Ind., who were willing to let sweet clover grow in the vacant city lots (page 752). I know of a city where a beekeeper went to the officials, asking that the sweet clover might be cut in order to improve the looks of the streets, not discovering his mistake until the flow of honey was cut off.

H. H. Root is quite right, page 779, October, in recommending friction-top pails for feeders. We have used them for several years and find them very satisfactory.

J. E. CRANE, defending deep extracting-frames, p. 944, says: "How nice to be able to take from our supers two or three full-depth frames solid

with honey and drop them into a hive that happens to lack stores!" I'm not going to mix in the fight, but I can fancy some of those shallow-frame fellows saying: "We can easily have a few deep frames filled for the purpose of feeding, but we would hardly want on that account to submit to the nuisance of having all our extracting-frames deep!"

"In no case should glucose be used. In the first place it is difficult to get bees to take it, and in the second place it will kill them before spring." That's said in December Gleanings, p. 911. Don't you want to back down from that, Mr. Editor? Here's what I find in Woman's Home Companion for December, p. 34. "Every pound of maple sugar, molasses, honey, or glucose that the American people can use instead of white sugar will release just that much food for the English and French children." In some other magazines glucose is put before honey, but is generally called "corn syrup." In December Good Housekeeping, p. 76, "brown sugar or glucose" is given as a proper substitute in recipes calling for granulated sugar, no mention being made of other substitutes. Now if glucose is all right to enter the delicate stomachs of little children as a substitute for white sugar, isn't there some mistake about its being such a bad thing for bees? [If you have ever tried feeding glucose to bees you would know it is very difficult to make them touch it. Now in regard to whether it does kill bees when they do take it, you are probably aware that grape sugar and glucose are much the same. When we say "grape sugar" we mean the commercial article which was sold extensively years ago. A. I. Root, in the early 80's. used it considerably as an experiment and succeeded in killing some of his best colonies that used it for winter stores. For stimulative brood-rearing it answered very well, but that was when the bees flew every day. We do not know anything about the effect of glucose on the stomach of a little child; but some years ago we ate it freely as an experiment and used it in place of sugar everywhere. In about three weeks we had such a bad case of indigestion that we began to think we were not going to get over it. By "glucose" we mean the commercial article and not the mixtures sold under various fanciful names. Bees might store these in combs—we do not know. In any event, we should be afraid to use them during the winter on account of the known effect of grape sugar, which we have stated is much the same as glucose.—Ed.]

STRAY STRAWS

Dr. C. C. Miller

J. L. Byer has two counts against me, p. 927, December. First, that I use too small hives. I plead guilty. I changed from 10 frames to 8 frames years ago,

because at that time it was the fashion; but I've said more than once that if beginning again I'd use larger hives. The second count is that Dr. Miller "is opposed to feeding the bees in the fall, preferring to give them combs of honey as needed, to make up any deficiency." I hardly know how to answer that, and I'd give something, J. L., to sit down and talk it over with you. Decidedly I'm not opposed to feeding in the fall, for each fall I feed any colonies that need it; but I feed honey, not sugar, and yet after all colonies are well supplied in the fall there will, with eight-frame hives, always be a chance to feed more in the spring, so I like to save over winter about two frames of sealed honey for each colony the next spring. You think it is not so well to replace partly filled combs with full ones as to feed, and by that I suppose you mean to feed with sugar. That's a new idea to me, and there may be something in it. Yet I've never been aware of any evil effects from putting in full combs. If, however, it should prove true that it is better to feed sugar syrup than to give full combs of honey, I should think it better still to feed liquid honey rather than sugar syrup.

Take combs out of the extracting-super and put them in the brood-chamber to have the pollen cleaned out, says J. E. Crane, p. 944. Five pages further along C. F. Alexander says, take them out of the brood-chamber and have the pollen cleaned out in the extracting-super! Possibly both are right. Locality? That or something else. Certainly in this locality I haven't had trouble with accumulation of pollen in extracting-combs. Of course my experience with such combs has not been so very great. But when I have put a comb with pollen in an extracting-super, the bees have cleaned out the pollen, slick and clean. But I didn't put "the queen and plenty of brood" in the super, as does Mr. Alexander. I should expect that to work the wrong way. I have my doubts about his explanation that the bees don't carry up pollen because they "have difficulty in carrying pollen thru the excluder." It is simply the common thing for the fielders to deposit their loads, whether pollen or honey, in the first story they enter.

Edw. A. Winkler, p. 936, says, "As the top wire is so near the top-bar I do not consider it at all necessary." May be not; and yet near the top-bar is the very place where the foundation stretches the most. Some beekeepers have wondered why brood

was not reared near the top-bar, without realizing that, altho the stretching there had escaped their observation, there was enough to keep the bees from using it for brood. [At the Des Moines convention, as mentioned elsewhere, there was some discussion along the line of stiffening up foundation by painting it with hot beeswax. This finally turned to the point of whether it would be cheaper to use more wires near the top and fewer wires near the bottom than are ordinarily employed in horizontally wired frames. Mr. C. P. Dadant readily agreed with us that putting more wires at the top would be a good thing. In our opinion it would be a mistake to remove the wire near the top-bar as suggested by Mr. Winkler.—Ed.]

In view of the fact that it is so common for the popular magazines to boost glucose and slight honey as a substitute for white sugar, *The Ladies' Home Journal* for December is a conspicuous example of the right sort. With, I think, a single exception, corn syrup (glucose) is not given in any recipe, while honey is given in fourteen recipes on p. 53, as also in three on p. 78, on which page it is said: "Honey, molasses, sugar, maple and brown sugar—particularly the first two—are the basis of many little-known sweetmeats that will delight the children at Christmastime." On p. 64 this statement is made resulting from an interview with Mr. Hoover and his assistant, Dr. Wilbur, Assistant Secretary of Agriculture, Dr. Taylor:

"Two important facts regarding sweets have been the result.

"First.—Human beings need sweets—must have them; while those who are omitting wines and liquors from their daily menus will find additional sweets almost a necessity.

"Second.—We can eat all the candies we want with a clear conscience if we eat those made from things other than cane or beet sugar; candies made from honey, molasses, maple sugar, fruits, nuts, raisins, chocolate are available and make delicious sweets."

Speaking of "sending comb honey by mail," p. 830, Allen Latham is the only one I know who can do the trick every time. I think the secret is in having a big lot of excelsior tightly wrapped. He once sent me a section that came in perfect condition, the bundle being eight or ten inches in diameter. I sent back a section in the same bundle, and it was smashed. He said I didn't tie it tightly enough. One man who sent me a section said he wasn't going to take any chances, and so he sent it in a box of heavy boards. It came "on the run." No thickness of lumber will break the jar as will the elastic excelsior.

Young-fellow-beginner-to-keep-bees, I commend you to sentence on page 831: "We always carry some extra combs containing

sealed stores to give the colonies in the spring if they need it." And they almost always will need it, especially if you have eight-frame hives. Even if a colony can exist to the honey-flow with no danger of starving, if you give it a comb of fall honey saved over, you have just swapped that comb for an extracting-comb of light honey; for if you had not given that fall honey, the bees would have had to fill that amount of white honey into the brood-chamber before storing in the super.

"The trend of the discussion seemed to be in favor of a 4 x 5 plain section" among Western New York beekeepers, p. 951. I wonder whether that's local or whether there's any such general trend. You might tell us how The A. I. Root Co.'s sales of 4 x 5 plain compare with sales of 4½ x 1½. I should expect at least two of the latter to one of the former. At any rate, if 4 x 5 should be made standard, do you believe you could whip those Colorado fellows into line? [About 20 per cent are 4 x 5.—Ed.]

"Prof. Coleman advocated selecting our best bees and breeding our own strain," says P. C. Chadwick, p. 924, December. Mr. Chadwick doesn't concur, but thinks ten dollars is well spent in getting an extra good queen from some one who has bred up a good strain, without waiting to build it up himself. Decidedly right; but after the queen is bought, then the Coleman plan comes in all right.

M.-A.-O., p. 976, seems to have the amiable desire to bring down trouble upon my youthful head. No need, M.-A.-O. I've trouble enough now, chasing around after you among the ad's in the back of *Gleanings* to find out what worse thing you'll call me than a "disputatious sonofagun," and I want you to understand that I have my opinion of any one indulging in such language.

Because of the war "it is apparent that honey will form a larger part of our dietary than ever before," p. 750. That gives me another chance to speak my little piece, and say that it will be a great thing for the health of the nation if even a part of the sugar now used can be replaced by honey.

J. E. Wing advises (p. 920, Dec.) not to have package bees arrive until bees start to whiten the combs along the top-bars. Supers should be given at that time, or earlier, and in this region no such whitening occurs until colonies are strong. I don't know, but raise the question whether it might not be better to be about two weeks earlier.

G. M. Doolittle says when a queen of the right kind is found "she should be kept as a breeder, even should she live to be five years old."—*American Bee Journal*, April, p. 122.

"**T**HRUOUT the whole year, why not keep sweet? No frown ever made a heart glad; no complaint ever made a dark day bright; no bitter word ever lightened a burden or made a rough road smooth; no grumbling ever introduced sunshine into a home. What the world needs is the resolute step, the look of cheer, the smiling countenance, and the kindly word. Keep sweet!"—Geo. L. Perin.

* * *

Do you remember on one of these pages I made the statement that I feared Uncle Sam was making a mistake in asking us to use honey to release sugar for the soldiers and our allies? In my opinion honey is so much better food than sugar that the soldiers should have it to enable them to fight with more energy. Evidently some one agrees with me, for I happen to know that a large honey-bottling concern has recently filled an order for one hundred gross of individual bottles of honey for the soldiers; 14,400 dainty little bottles of nature's only concentrated sweet are on their way to cheer that many soldiers.

* * *

At this point I wish to take a little space to correct a slanderous statement made by editor E. R. Root on page 940. Dr. Miller called attention to a clipping stating that Herbert Hoover uses honey in his tea. Far be it from my intention to criticise a great man for sweetening his drinks with honey or anything else. His digestion is his own. But it did make it hard for me to obey the injunction expressed in the quotation at the head of this page when I read E. R. Root's sweeping statement, in reply, that "the editor is doing the same in his family, and so also is all of Rootville." Speak for your own family, Mr. Editor. To be accurate, there are eight families in Rootville, and four of those families do not use sweet of any description in coffee or tea. Furthermore, the grownups of those four families drink coffee regularly at least once a day; and if a member of one of the aforesaid families wanders into the Puerden home Sunday evening and finds the head of the family and his wife partaking of a tete-a-tete lunch accompanied by coffee he is not afraid to accept a cup of Stancy-made coffee. Then he goes home and sleeps the untroubled sleep of the just. But you just try offering a harmless cup of coffee to a member of the families who drink their coffee sweetened. This is a sample of the reply you will call forth, accompanied by a virtuous, dyspeptic look.

OUR FOOD PAGE

Stancy Puerden



ings of late and substitute cereal coffee." Draw your own conclusions. However, if you must have your coffee and tea sweetened, honey is probably more wholesome than sugar. It may be well to state that those families in Rootville who drink unsweetened coffee eat more honey in the course of a year than the coffee sweeteners; but they give it its own proper and important place in the menu.

* * *

No doubt you have all heard and read many silly and untrue stories against the work of the Food Administration. The country has been flooded with them, as well as stories against the Red Cross and Y. M. C. A. Let me quote a little from a letter sent out by the Food Administration to Household editors. "The food situation is today tragically serious, and hunger may imperil a conclusive victory for the Allied Armies if the people of America do not exert their utmost effort. . . . Untruths have been fostered which have done more harm than battalions of German soldiers, because they have prevented this country bringing all its resources to bear against the enemy.

The American whose heart is with the flag will back the efforts of the Government, not only by deeds but by every word he utters."

Perhaps it will help all of us housekeepers to think of ourselves as soldiers enlisted in the Food Administration. We know soldiers in training have to do many hard and disagreeable things, and that they frequently have to sacrifice comfort and inclination. For instance, a young man who left an office position, at a good salary, is doing his bit shoveling coal on one of our great battleships. Another young man in the navy writes he has learned to eat hardtack. The next time you hear some one grumbling at good corn bread on a wheatless day, try offering him hard tack.

* * *

I wonder how many of the Gleanings housekeepers are in the habit of carefully measuring all ingredients called for in recipes. Have you a set of measuring-cups and spoons similar to those illustrated? The two smaller cups are exact half pints, divided into fourths on one side and thirds on the other. The large cup is a quart measure, divided into fourths. The set of measuring-spoons measures accu-



rately one spoonful, one-half spoonful, and one-fourth. You may wonder why I am showing both the glass and tin measuring-cups, for it is true that a woman who uses her head for planning can get along nicely with one measuring-cup. It is for this reason: Some of my recipes call for boiling water; and after neatly and suddenly removing the bottom from several glass measuring-cups in succession by pouring boiling water into them I added a tin measuring-cup to my kitchen equipment. A tin cup alone would do, but a glass cup is much more convenient on account of its transparency. You may also get a set measuring a whole, half, and quarter teaspoonful; but as a teaspoonful is one-third tablespoonful it is unnecessary.

Remember, too, that unless stated to the contrary all measurements should be level. When a recipe calls for a heaping teaspoonful of baking powder it is most indefinite. Three level teaspoonfuls may be heaped on one overworked teaspoon. The rule now generally used is two level teaspoonfuls of baking powder to a level cupful of flour, if no other leavening agent is used. The old way of stating it was one rounding teaspoonful; but it was discovered that the same result could be attained with greater accuracy by measuring out two level teaspoonfuls. Yes, I will cheerfully admit that there are far better cooks than I who never measure ingredients; at least, that is what they would tell you. In reality they have trained themselves to measure with their eyes. Perhaps such cooks are born, not made. Believe me, the accurate-measurement way is quicker, easier, more economical, and the only way to teach the young cook.

So many housekeepers say to me, "I have no trouble with the meatless Tuesday, as we have not been eating so much meat on account of the high prices, but the wheatless day bothers me." For that reason I am suggesting menus for a wheatless day again.

WHEATLESS WEDNESDAY

(Also Sugarless).

BREAKFAST	DINNER
Honey baked apples	Home-made sausage*
Oatmeal with top milk	Mashed potato puffs
Rye bread toast	Beef greens
Honey	(home canned)
Coffee (Milk for children)	Pickles Jelly
	Boiled Rice
	Honey sauce
	(Dec. issue)

SUPPER OR LUNCHEON

Corn pudding (canned or dried corn)
Baked potatoes
Corn and rye muffins
Patriotic fruit cake*
Home-canned strawberries

Notice that the dinner calls for home-made sausage. I am going to admit right now that the Puerden family has kept pigs for years. We are proud of it now that we are told that every pig raised in this country amounts to a shell to defeat the kaiser; but it should be stated that we live on the edge

of town, and our pigs reside still further out. To get to the point, since I have made sausage I have discovered that people seem to be inordinately fond of home-made sausage. There is no reason why every housekeeper should not have home-made sausage. Just get a few pounds of pork, say from the shoulder; grind it, season it, put it once more thru the food-chopper and pack it away in pails or crocks. If you make enough to last some time, set the pails in the oven, bake until the fat rises to the top, and then set away in a cold place. When the fat has hardened, cover the pails. It will keep for months. If your sausage is lean it may be necessary to pour in a little additional melted fat. It should entirely cover the meat, making an airtight seal. When you are ready to use it, warm the pail until the fat on top has melted; turn the sausage out on a platter, slice off what you require, put the remainder back in the pail, cover again with melted fat, and put it out in the cold again. You may use any proportion of fat and lean you wish. It is a matter of taste.

Any easy way to get the seasoning evenly distributed is to season enough for one meal at a time. For 1½ pounds of ground pork I allow 2½ teaspoons salt, 2 teaspoons finely crumbled leaf sage, and ½ teaspoon pepper. Many would prefer it more highly seasoned. A little experimenting will enable you to get it just right to suit your family; but remember it is much easier to add a little seasoning when you cook it than to remedy the matter if you get too much. The second grinding is not necessary, but we think it a great improvement.

The Patriotic Fruit Cake gets its name because it calls for no sugar, wheat flour, nor shortening—three foods much needed for export. It should delight a housekeeper, because it does not require baking, and, consequently, there is no possibility of its falling. Do you suppose there ever was a housekeeper who has not had at least one cry over a fallen cake? While this cake is somewhat expensive, it can be cut in very small pieces and served with fruit or a simple gelatine dessert.

PATRIOTIC	FRUIT CAKE
1 package dates	1 tablespoon citron
1 cup figs	2 tablespoons honey
1 cup raisins	1 tablespoon orange juice
2½ cups corn flakes	¼ teaspoon salt
1 cup nuts	1 or 2 tablespoons lemon juice

Stone the dates and put dates, figs, raisins, and corn flakes thru the food-chopper, alternating them to get an even mixture. Add the nuts cut fine, but not ground, the citron shaved in fine strips, the honey and the salt. Use enough fruit juice, preferably lemon and orange, to moisten slightly, about two or three tablespoons; pack it in an oiled cake-pan and set aside for twenty-four hours before cutting. Other dried fruits may be substituted, and shredded cocoanut may be used instead of citron. It will keep well indefinitely.

OVER and over again we hear the same story, the up-to-date beekeeper leaving the slovenly one behind, the bees in modern hives outstripping their cousins in boxes. W. R. Graham, of Bergholz, Ohio, says that it looks as tho his ten hives of bees give as much honey as all the rest in town, and there are about a hundred all told; but, you see, the others are in box hives and left to "dig in for themselves."

Last summer three of his hives gave him \$40 worth of honey. Full sheets of foundation, over queen-excluders, on Jumbo brood-chambers, gave a wealth of chunk honey, which sells at 20 cts. a pound. (Next year it may sell for more.)



Hunting bee-trees is easy when the bees aren't in a tree.

Fifteen bee-trees did Mr. Graham cut last summer. Once he hunted for three days before finding the elusive bees hidden in a deep hollow, with combs 14 inches long and a foot deep built on a hazelnut bush. Cutting them out, as you see in the picture, he took them home, stood the combs in a box, set the box in a home-made hive, rigged a super

Beekkeeping as a Side Line

Grace Allen

over the top, and they stored sixty pounds of honey in sections.

It isn't a good location, Mr. Graham says—drouth every summer—yet the bees "pay all

expenses and then some. And"—and here is the secret—"it is a pleasure for me to take care of my pets."

Prof. Baldwin refers, page 784, October, to the National Geographic. If any one thinks it might be dull work studying flowers, let him read some of those charming sketches of wild flowers in recent numbers of that magazine. They are far more interesting than fiction. I should like to quote bits from some of the delicious descriptions. I just noticed that of the New England aster, for instance (Aster Novae-angliae), June, 1916; but I fear the editor would rule me out of meeting, for I should not know where to stop. A Nashville florist advertises "The beauty about our business is—flowers." Well, one of the beauties about our business is flowers too.

Another is books. What dear old books "Mary" writes of in her last interesting letter! "You would love these musty leather-covered volumes," she says, "with their sere brown pages." I love them already, just from the letter, especially "The Feminine Monarchi." "In a word, thou must be chaste, cleanly, sweet, sober, quiet and familiar so they will love thee and know thee from all others," "Mary" quotes, and leaves us all indebted to her for the quotation. The quaintness of it, and the simplicity and the flavor! He was more than a beekeeper, that Samuel Butler of the seventeenth century, whose leather-bound book "Rob" has purchased for an unconfessed price. He was a philosopher and a gentleman, and he came dangerously near to being a poet as well.

Mr. Frank Pellett writes in the October American Bee Journal of a method of making increase for which he claims substantial advantages. Are we going to dismiss it with a shrug? "Prime swarms are good enough for me," some one says. "And division for me," says another. But in reality nothing is good enough for you except the very best you can learn to do. It may be prime swarms or it may be Mr. Pellett's method or it may be something quite different from either. The thing that matters is your open-mindedness and eagerness, your spirit of unceasing progress—"onward and upward forever."

Said a man to me last week,

"Those Roots are surely bright;
They cross their bees with lightning bugs
And work 'em day and night!"

Beauty In a Bulletin.

Oh I have read a thing of wonder!
Not all the type and all the words could sunder
The beauty from the fact;
Nor all the scientific phrases, so exact
And prosy, hide the glowing thing
They told and I would sing.

(For did you think
The beauty of a story lay within the ink?
It may—where words become an art.
But deep in *every* page there is a heart,
And in the heart the beauty lies.
For tho the words you read,
Discuss in dry unsmiling ways,
Dry wherefores and dull whys,
Let but your stalwart vision lead
A swift trail thru the maze
Of logic and instruction—and behold—
Some young, sweet, old,
Undying beauty at the heart of things,
Where beauty always sings!)

This tale of wonder that I read today
Within a printed pamphlet lay,
Called "Wintering of Bees."
Practical the problems treated,
With scientific, up-to-date experiments repeated—
Prosy pages, these!
For see—
Among the words that spoke to me
Were—*insulation,*
Ventilation,
Heat production, stimuli,
Observation,
Variation,
Thermal junctions—where and why;
Schematic curves, and amplitude,
Minima and maxima,
Bee behavior, time of brood,
Theory, phenomena.

But had you thought
Such heavy words mere lifeless things?
Not if you sought
The truth that science tells;
For in the haunt where proud truth dwells
There beauty also dwells and sings.
So as I read, my bulletin became
A sudden light, and in the flame
Was beauty! And I saw
The wonder and the miracle of law.

The tragic hours
Stood at salute an instant while I went
In sudden fancy, with intent
And visioning powers,
Back, down the ages.
There primeval bees
Within dark winter's hollow trees
Clustered, as these my so-called prosy pages
Tell me today.
And so, in far-off future times,
In this same way
Shall bees be clustering still,
While I, with all my dreaming rhymes,
Lie sleeping on a hill.
(O you who love me, let it be a hill!)

The waiting hours unbend
To go about their grim relentless work;
They cannot shirk

Their going-on to some great end,
For all my visioning and dream.
But now across their murky red I seem,
Where khaki-colored waves advance,
To see quaint skeps in broken lines
Beneath the brittle, war-torn vines
Of Flanders and of France;
And in each skep my fancy sees
The closely clustered bees.

Where England's ancient groves of oak
Spread mighty arms;
On little wistful German farms
(Ah! once that name we spoke
With thoughts of learning and great song,
But now—O God, how long!);
Where goatherds dwell in Alpine passes;
Across unending plains of Russian grasses;
On wide Canadian fields that sweep
Down from the north and help to keep
With us the border line of old;
Wherever winter's grisley, cold,
Unwelcome hand
Has gripped a land—
Ours, or these other lands afar—
There in their hives or hollow trees
Cluster the bees—
How old and wise they are!
(And yet themselves, not old at all
Beyond their few short weeks of sun and flower—
Nor wise perhaps; but what then shall I call
Their heritage of power?)

High within the gloom
Of their hushed and fragrant room,
Rise mystically molded waxen towers,
Within whose rows of vaulted treasure cells
Are hid the mingled essences and haunting smells
Of perished flowers.

Here hang the bees, clustered the self-same way
They clustered ages past.
Uncounted tiny bodies move and sway,
Now slow, now fast;
Wings keep their strange incessant beat,
And from the center of the ball
To the last concentric wall
Issues the living heat.
The places change; some enter, some pass out;
The vibrant sphere forever moves about
Within itself; and if some winter day
Grows mild and warm, it breaks away,
And some one in his native speech that night
Remarks, "The bees were flying round today a
while—
They dragged the dead ones out—there's quite a
pile—
I guess they all were glad to have a flight."

Then back they come together,
Again to cluster, week on week of frozen weather.
Sometimes they faintly hum—
I wonder if they know that some day spring must
surely come.

O bulletin of grave instructive prose,
Today I have dived under
Your words and very facts, and found the heart
you hide,
A heart where deathless beauty grows
And there is dream and wonder,
And on the mystery of life a far gate opens wide.

GLEANINGS FROM THE NORTH, SOUTH, EAST, AND WEST

NOT only is the walnut being cut out from our

Tennessee woods to make gunstocks, but the locust also is being taken out rapidly. Walking across country one peaceful autumn Sunday afternoon we saw several trucks of locust logs being hauled, even on that day, so urgent is the need. This locust, we are told, is taken to our ship-building yards to be used as ship "pins." Many a beekeeper will notice the loss of this heavy nectar-yielder, while all lovers of beautiful bloom and fragrant breezes will miss these trees that have made countless generations of human hearts glad in the lovely days of late April.

Dr. Miller, those men whom I referred to as trying movable frames instead of box hives, happen not to be in Tennessee. But of course I must admit that Tennessee has box hives, many of them; and among box hive beekeepers (?) there is no swarm control. When I doubted about indiscriminate swarming being the general practice in Tennessee I was quoting from a bulletin, so I suppose I was thinking chiefly of the bulletin-reading beekeepers. That problem wasn't fair; but for a fact the bulletin-reading, journal-taking, convention-attending, careful, conscientious beekeepers of Tennessee have sometimes been nettled by being scolded for things they didn't do.

Take the matter of winter packing. It might be put to them thus: "Here is a good chance to make your present success more successful." And they would quite likely give it consideration. But they have been told: "You lose half your bees every winter, so you'd better get busy and pack." Well, they know they don't lose half their bees every winter, so they don't get busy and pack. I am sorry more are not trying it this fall, at least on a small scale.

I protested just this way to our good friend Mr. Bartholomew a couple of weeks ago. He took issue with me on the ground that beekeepers were beekeepers, whether they were good or bad; and when people said beekeepers of Tennessee they meant beekeepers of Tennessee, all of them; and so they were justified in talking and writing about our 50 per cent average winter loss, and our indiscriminate swarming, which sounds reasonable enough.

C. E. Bartholomew, of the extension department, has been transferred from Tennessee to Colorado. Owing to his recent illness, a change of climate seemed advisable for the approaching winter—not that he is ill now, however. He took a splendid long walk with us one beautiful October Sunday, when the skies were bright blue and the trees like a flame. His close ac-

THE DIXIE BEE

Grace Allen, Nashville, Tenn.

quaintance with plants and insects made him a particularly in-

teresting companion, as we left mile after mile of glowing countryside behind us. But recently recovered health is truly something to be guarded, so he plans to be particularly careful for a while. Fortunately the department was able to make the transfer, so Tennessee's loss becomes Colorado's gain. Our best wishes go with Mr. Bartholomew, and we hope he may come back to Tennessee.

In the summer of 1916 we had a touch of a trouble that answers most frequently to the name of "disappearing disease." But it was in one colony only, so far as observed—the one directly at the foot of the peach-tree. Last year it was in many colonies slightly, the worst one being another one under the peach-tree. For a while I felt, like Mr. Holtermann, p. 766, October, that the shade must be a strong contributing factor. An experience that Mr. Bartholomew reported added weight to this conclusion. Yet after all it became pretty badly scattered thruout our little yard, most of which is not particularly well shaded. Bare places in the grass all around were strewn with dead bees.

Mr. Byer certainly uses the correct term when he talks about "crawling" bees in autumn. I love flying bees, and don't seriously mind stinging bees, within reasonable limits; but I do solemnly object to crawling bees. They nearly always develop into stingers eventually, and somehow leave me a lot more resentful than when they just fly at me straight—biff!—that way. In fact, it is only in the fall that I ever think about the advantages of a really bee-proof working suit.

There were more moths darting and hovering around the beeyard last fall than I ever noticed before. Ordinarily we have faith in the vigorous defense of our Italians—justifiably so, as the only trouble we have ever had with moths has been in combs stacked in the supply room. I hope this disappearing disease may not have weakened their resistance.

And now the editor says that we of the South not only have a wintering problem, even as they do in the North, but have also a "springing" problem—"and by no means the least is the springing!" Well, the solution for the wintering is the solution for the springing, we understand—packed hives. But please, Mr. Editor, don't spring anything on us that packing can't cure!

THE Honey Report contained in the November issue

IN TEXAS

F. B. Paddock, State Entomologist

of the Monthly Crop Report contains some very interesting figures on the Texas situation. The average yield per colony for 1917 is placed at 12 pounds; this amount is, indeed, very liberal considering this year's entire failure of production over such an extensive area of the principal honey sections. Of the honey produced, there was a very decided tendency toward the extracted, and there is every reason to believe that this tendency will increase in the future. Local trade everywhere is being induced to purchase extracted honey. The term "chunk" honey has been discarded on the local trade market, and "bulk comb" honey is now applied to this product. The amount of honey placed upon outside markets from this state was exceedingly small this year. And this amount should have been still less, for honey was shipped in to supply the local demand, in a few localities. The local demand for honey has been very good over the entire state, no doubt due largely to the sugar shortage, and somewhat to the desire of all to economize. This has resulted in very good prices being received for all good local offerings of honey in any form.

* * *

The Honey Market Reports which were issued by the Office of Markets, during the selling season, were not given proper consideration by all of the producers of this state. This may be due to two reasons: low production and excellent local demand. Regardless of these conditions the beekeepers of this state should certainly avail themselves of the information found in the reports, which is given for their benefit. Cases came to our attention where the producer was offering honey on the local market at a price below what was indicated in these market reports. We found on the part of many too much of a feeling of indifference—a disregard for outside prevailing conditions, and a tendency to offer their honey at prices that prevailed locally in former years. It is one thing to produce honey satisfactorily, but it is another thing to market it at profit. Marketing is fast becoming recognized as a science; and when every possible aid is given by experts it should be accorded consideration by the producers. It is to be hoped that the excellent service rendered by the Honey Market Reports will be given again this year.

* * *

With the great feeding problem on hand, there arises again the question, "Which is better to feed, sugar or honey?" Provided it is possible to obtain either in sufficient quantity, which makes the better winter feed? There are plenty of beekeepers who maintain that bees are killed by feeding a sugar syrup. Of course, we know that sugar

is not the natural food of bees and on such food alone they cannot

rear brood; but it is a fact that many a colony of bees will be carried safely thru the winter on a sugar feed. Another interesting question along this line is the commercial value of honey and sugar as a feed for bees. With sugar at 8½ cents per pound, what can one afford to pay for honey? There are those who contend that sugar at this price will go further than honey at fifteen cents a pound. This question will bear careful examination and experimental work.

* * *

This has been a year of trial for the careful and serious beekeeper. Conditions have not been so hard in many years; but in spite of the heavy losses suffered in many sections, the older beekeepers are optimistic concerning the future. This year the bees need more help than ever, and now is the time for every one to take the best care of his bees. There is too much of a tendency at such times to throw up the hands and allow "hard times" to finish its work. When the bees need feed it should be given. Sugar should be purchased if honey cannot be procured. There are many who have not examined their bees for some time; and when they do they will find only empty hives where colonies of bees used to be. This has already been the experience of some, and will be the experience of many others before next season. Give the bees a chance.

* * *

In spite of the unprecedented high prices of honey of any description there was more honey left with the colonies this year than ever before. On every hand, beekeepers took from the hives only a positive surplus of honey. There is also a growing tendency to have some surplus stored in brood-frames to facilitate feeding in the spring. This practice should be extended. Some spring feed is always needed by a few colonies; for even when the average conditions have been favorable, a colony here and there will need a little help to put it in good condition.

* * *

A few beekeepers who are willing to face the situation squarely have set aside a liberal sum for feeding each colony of bees. In one instance an estimate was made which was half of the value of a good colony of bees. With many colonies to feed, such an estimate would mean a considerable sum. It shows that there are those who have plenty of confidence in the future. Next spring bees will command a good price, and the careful beekeeper will certainly be rewarded.

* * *

Rains have been quite general over a considerable portion of the honey-producing area of the state. Such rains will prove to be a great benefit to the honey flora of these

sections. In some localities mesquite trees of considerable size have not been able to withstand the drouth of the past year. In many localities horsemint did not blossom this year, which may be very disastrous. Weeds are already coming up in some sections since the rain, and in one of the southwestern counties the bees were gathering pollen and some nectar from the "white brush" during the last week in November.

Another benefit to come from the Texas Honey Producers' Association, and no doubt

the biggest to date, is the ability of the association to furnish beekeepers of the state with such sugar for feeding bees as may be needed. When the sugar shortage threatened the beekeepers here, steps were taken by the association in connection with the Food Administration whereby sugar to meet feeding needs immediately became available to the beekeepers of the state. This is only another example of the benefits of a mutual organization, such as our beekeepers have long needed. Still there are those who cannot see any benefit from co-operation.



IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.

THE rainfall for the season to date (December 6) has

been very light; but the total absence of the usual north winds, and an exceptionally warm pleasant autumn, gives us stronger hopes for a heavy fall later, which, after all, is what counts the most.

Help for the beekeepers is going to be a problem next season, and is even now to some extent. When the draft list of present eligibles is completed it will have drawn many of our best helpers, whose places must be filled by men of less experience as well as less enthusiasm and vigor. There are avenues in farm labor that can be traveled very well by most persons; but when it comes to the bee business it requires both knowledge and experience to fill the place satisfactorily.

Comb-honey production is on the decline, if we are to believe the various reports we hear from time to time, and we have no reason to disbelieve them when a good comb-honey producer like Wesley Foster, of Colorado, gives us the sign of despair.

In my opinion it is the most economical transformation that ever visited the honey industry. There are few places in the United States where beekeeping has been a flat failure for comb-honey production, that would not have proved good locations if extracted honey had been the line of effort and education. One of the great needs of the day is to have some one round up these comb-honey producers and show the superior value of extracted-honey production. Year after year they buy hives and sections to put on their colonies, only to be disappointed in the returns. If they do get a super or two of comb honey they take it off and leave the bees with so little stores that they become destitute before the following season. The average farmer with ten colonies, now almost neglected from failures, could be shown that, with the aid of an extractor and plenty

of combs, he could have as great an asset as the dairy cow or

poultry. This education of the small honey-producer is a work that is given far too small consideration in this present-day need of an increased production of sweets. The difference between the amount of comb and extracted honey that may be secured is from 50 to 75 per cent—not that there is so much difference during a heavy flow where the bees are in experienced hands, but the average would amount to that much if the bees would only store the slow flow. There is a big missionary work to be done among the farmer beekeepers who do not read the bee journals and never see an extractor.

Mrs. Allen says, page 928, December, "Spring after spring finds combs in the hives so moldy that even the bees, skillful and thrifty tho they are, destroy them rather than try to repair them." I have plenty of moldy combs, even in this climate; but I never knew of a colony destroying them to save labor, or for any other cause. I have never seen the combs too moldy for a new swarm to tackle and clean up in short order.

The American Bee Journal for November shows a picture of a 27,000-pound honey-tank. I thought I had a large one at 10,000-pound capacity. It is only in case of emergency that I allow it to become full. I have known of two or three that have leaked badly because of the great pressure, and I always feel that it is putting too many eggs in one basket.

Combs, combs, combs! the greatest asset in honey production. Give the bees plenty to do at home and they will not be inclined to leave you. But do not give it all to them at once. Give them a chance to finish as they go, with an addition of empty comb room whenever they need it, so that every possible ounce of nectar may be procured.

W HERE are we, any way, on this subject of

NOTES FROM CANADA

J. L. Byer, Markham, Ont.

winter packing for bees? A good authority living as far north as Syracuse, N. Y., wants abundance of packing on top of the hives, and some protection as well on the back and sides, but nothing in the front. Still another authority of international repute—Mr. C. P. Dadant—endorses this method for Illinois; and the editor of this journal (page 909) at least gives countenance to the idea by giving it prominent editorial mention. And yet the bald, cold, scientific truth as demonstrated by authorities at Washington and other places says that such protection is an illusion. As a chain is just as strong as its weakest link, so packing around a hive is just as effective in proportion to the least protected part of the hive. While we are loath to disagree with scientific findings, yet there is no question that those who have tried out these things for a number of years in a large way will be inclined to agree with the ideas of Mr. Dadant and others. Personally we want packing on all sides of the hives, and an abundance on top. If forced to dispense with any of this packing, assuredly we would choose to do with less on the sides rather than to reduce the amount on top of the hive. Experiments carried on in our yards for a number of years have demonstrated that for our climate, at least, the primary factor toward good outside wintering is an abundance of good stores, assuming, of course, that the colony is normal in every other way. Winter packing reduces food consumption, and, incidentally, means better wintering as a rule. With deep frames, or with L. frames almost solid in the late fall, bees will usually survive the winter if provided with lots of packing on top of the hives, even if the sides and ends are unprotected. But with no packing over the tops of the hives, altho the sides are well protected, the heat continually escaping upward will prove a great strain on the colony, even if it does not succumb entirely. The Demuth plan looks good to me if one chances to be short of packing-cases, and I regret that the plan did not come out in time for us to try it out on a limited scale this winter. If trying the plan, we would transfer the seven combs as soon as the brood was hatched and then feed quite freely. A tall brood-nest like that, with bees clustering near the bottom of combs on end, with a great depth of honey above the bees, constitutes simply an ideal condition for good wintering, and heavy side packing would not be necessary.

On page 910 it is stated that "it is in line with the practice of our best beekeepers" to have the summer brood-nest contracted down to a space of two-thirds or three-fourths of the full hive capacity, when wintering outdoors. I wonder just what proportion of our best beekeepers are

really practicing that plan. The late Wm. McEvoy was an en-

thusiastic upholder of this method of preparation for winter, and I suppose his sons are still following in his footsteps in that regard. The plan is eminently sound in theory and absolutely safe in practice, but means a great lot of extra work. While I feel quite sure that it would pay, taking one year with another, yet we, with many others of like convictions, must plead guilty to wintering nearly all our bees in the full-sized brood-nests that they have in summer. Let us hear from some who contract for wintering. For the last few years I have been unable to find any extensive beekeeper putting the plan into general use.

Brown sugar for wintering bees (see page 911) is decidedly risky unless climate is taken into consideration. We tried the brown sugar only once in a very limited way, and the results were anything but satisfactory. The late Mr. McEvoy told me that one year it was hard to get granulated sugar, and he fed some 20 colonies with brown sugar, doing the work quite early in the fall, so that all stores would be sealed nicely before cool winter. But before spring all these colonies had dysentery, many perishing outright while all with the granulated sugar stores were in perfect condition.

Possibly the brown-sugar stores would do in climates where bees have frequent flights; but for cold localities where bees go for many weeks without flight, brown sugar would be a last resort and used only when nothing else was obtainable.

In a late issue of the American Bee Journal, in describing some of the things seen while visiting Mr. France, of Wisconsin, the staff correspondent mentions the fact that their honey is always sold in the liquid state. He further says that "the final consumer nearly always requires his honey in the liquid state." This must be a question of "locality" again, as here in Ontario, aside from the glass trade in extracted honey, no effort is made to retard granulation, for about all customers expect to find the honey in pails granulated. While directions are on pails for liquefying, we personally know that a great many consumers prefer the honey granulated, especially if it has a fine grain and texture.

A nice spell of warm weather in mid-November gave the bees a cleansing flight. At present, Dec. 5, we are having nice ordinary winter weather, and the bees are in seemingly good condition.

Our buckwheat honey was sold at 13 cents in barrels, and 13½ in tins—the sale being made about five weeks ago. Now the same grade of honey is selling at 2 cents advance over those prices. Where is the limit?

ANOTHER inquiry has come to hand for a book-

FLORIDA SUNSHINE

E. G. Baldwin, Deland, Fla.

consider the most desirable for rearing bees?

let on Florida beekeeping. While Florida is not as large as all the rest of the United States put together, by any means, still it is a big state; and while the state as a whole is not of even value, for honey production, still certain localities are excellent, and in good seasons have yielded the largest crops of any localities known in the world. We refer to the mangrove sections of the East Coast. The whole problem is one of the man and the locality combined. If a man knows how to make the most of his locality, or can shift his bees by boat from one place to another, it is almost six to one that he will succeed. But conditions are so radically different that but very little that is written for even the Cotton Belt will apply fully to Florida. The editors have given considerable thought to the question of a Florida booklet on apiculture, but the honest question is, "Will it pay the publisher?" It will pay the few who want and need such a manual, no doubt. Perhaps the time for it is not yet ripe; but it is probable that, after this war, such a book will be forthcoming. At present, almost all writers who make a general survey of beekeeping conditions in the United States do make a separate class for Florida.

* * *

Kenneth Hawkins, apicultural assistant, in general charge of the southern states, has just gone south (Nov. 10). His main aim is to study diseases and diseased conditions in Florida, and, secondarily, to meet bee-men there and associate with them fraternally. He has several meetings in view. C. K. McQuarrie, State Agent, Dep't A and M., Gainesville, Fla., has indorsed the proposed trip of Mr. Hawkins, and is ready to extend a cordial hand of greeting. We feel that Mr. Hawkins will be welcome anywhere and everywhere. So far as our memory serves us, this is the first federal agent that has visited Florida since Mr. Demuth, now assistant to Dr. Phillips, visited the state six or more years ago. We do not yet know whether or not Dr. Phillips plans to include Florida in the extension work that he is planning for the coming year.

* * *

An inquiry has come to hand from a correspondent in Mayville, N. Y., asking for information on raising bees in Florida. His questions follow:

1. How many colonies would be required to produce 50 pounds of bees for shipping north?
2. At what price can bees be bought locally?
3. Are there many wild swarms in the woods?
4. Is it necessary to feed any during the winter?
5. What section of the state would you

1. It depends much on what condition you plan to leave the bees in, after shipping from them. Fifteen would leave the colonies weak, probably; twenty-five would allow the fifty pounds to be shipped with little diminution of the working strength. It could be done from ten colonies, but if shipped in time for clover in the North they would not be more than fragments of colonies after the fifty pounds had been shipped away. If taken thruout the season, even ten colonies could be left in good shape for winter.

2. At prices ranging from three to five dollars per colony, usually, if at all.

3. In some localities, near woods, many swarms are to be found. One man near Bradentown told me that he had "spotted" fifty swarms, and was awaiting leisure time to cut the trees.

4. No, not if ordinarily good care has been given. Like every other state, Florida offers no openings for slovenly methods.

5. Not north of a line drawn straight east from Tampa; the further south the better, generally speaking, for weather conditions. As for flora, a man must come down and see for himself first. No offhand directions can be given.

* * *

With prospects of a thrilling demand for all the honey the country can be made to produce another year, surely Florida beemen ought to "move up on the proposition" with all the force and brains in them; and one of the best means for making a big drive in the spring is to start in the winter with full colonies and full hives of honey. I have never yet found a colony with the hive too full of honey for good results; but, alas! too often have we found colonies that suffered from too little stores. The bees always seem to find room for the honey somehow.

* * *

"Mr. Pellett announces to us that Prof. Milten has now 75 girls taking the special course in beekeeping at Ames College (Iowa), American Bee Journal, p. 193. Dr. Phillips says there are now 22 colleges and universities offering courses in beekeeping. Every state produces honey, therefore every state should have a state apicultural department in its colleges or universities, one to every state. Not until then can it be truly said that we are abreast of the times apiculturally.

* * *

W. F. LaRoche, of Courtenay, Fla., writes: "Thanks to the cabbage palmetto, we have harvested a very satisfactory crop this season." Good for you, friend LaRoche! You stand almost in a class by yourself, this year in the state. Not many beemen can write "satisfactory" as their verdict of this year's honey crop.

THE high price of honey has cut down the local

AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado

it might seem that beekeepers should be able to purchase the

consumption at least one-half. Calls are quite frequent; but three times out of four the price spoils the sale. Nearly all the honey being sold at retail by the grocers is going at less than it is worth in car lots. Our local consumers have been spoiled by the low prices at which some of our off-grade honey is sold, and also by the farmer-beekeeper trading his honey for groceries and taking any price offered for his product. Local advertising would help greatly, however, and it should be done by every beekeeper, for the local market is often a very present help in time of trouble.

In Colorado comb honey sold at the beginning of the season at \$3.50 per case in car lots. It ended the season at \$4.00 to \$4.25. Extracted honey sold in car lots at 11 to 16 cents per pound in car lots, the latter price being secured for some of the best honey sold. There has been a steady advance in honey prices since early in the season; and with the continued calls for honey, prices should hold up another season provided the war continues; and even if the war ends, prices will not drop for some time. Beekeepers can safely plan to increase their production in extracted honey and comb honey also will doubtless command a high price.

Beekeepers in some parts of Colorado tackled winter protection with zeal. Various methods are being used, yet very few are going to the expense of constructing quadruple cases. Some are packing colonies singly, some are putting nine together. Straw seems to be the principal available packing material. Since few are securing all the conditions necessary under Dr. Phillips' recommendations, the results will be problematical. With the prices secured for honey

best of equipment for winter protection, but it will take several prosperous seasons for some to get where they can afford the quadruple cases, and by that time a cheaper and better method may be available.

We need not worry about tin cans for the coming crop. We worried last season to no purpose. There were lots of cans at a constantly increasing price. Now that the government has fixed the price on tinplate we are assured of a stable price lower than the highest price of last season; but we may experience some difficulty in getting the cans when we want them, so it is good policy to order early. Five-gallon cans have dropped from about \$46 to \$37 per hundred. They may go lower, but probably will go little if any higher. [These prices on cans do not prevail in the East at present.—Ed.]

Next season will see the passing of Colorado as a comb-honey-producing state. Comb honey will be produced; but three-fourths of the total crop will be extracted if present indications are to be relied upon. Honey prospects are good, so far, altho bees have consumed a great deal of their stores on account of the warm weather. The past week, December 10, has seen a change, however, and we are having a real winter now.

Here is one defender of the shallow extracting super, even if it is only half depth. The uncapping can be rapidly done, and there is little if any difference in the amount of honey that can be extracted in a day. Then they are more easily handled; and, if wired, are less likely to break out than the full-depth combs. Comb-honey producers can well afford to purchase shallow extracting frames for their supers. They are a decided success.



A warning to be heeded a few months hence. This apiary, owned by John Wallace, of Grand Junction, Colorado, was badly decimated a year or so ago by fruit-tree spraying.

S. H. S., Virginia. — My bees are infected with European foul brood. I have 18 colonies and want to treat them in the spring, and would be glad if you would advise me as to the best methods. Would it be best for me to buy queens and requeen, or to buy a breeder and raise the queens? Can I save the combs that I now have, or must I do away with them? Can I cure it and get a crop of honey next year?

A. It would be possible for you to treat your diseased colonies next spring. It will not be necessary to destroy any combs, hives, or equipment. We would recommend to you the Alexander treatment. The colony should be made queenless for a period of 20 days, cutting out cells in the meantime if any are developed, and then giving a ripe cell from the best Italian queen that you have. But if you make your colonies queenless for twenty days in the spring when breeding is very necessary, it will put quite a setback to your colonies. It will, perhaps, be advisable to let breeding get started, so that young bees will be hatching out; then make the bees queenless.

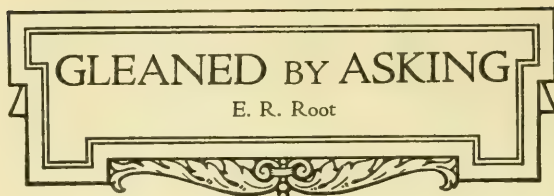
If you have a colony in the apiary that does not have any European foul brood, it may be resistant enough to take care of the disease when it appears; but probably it will be safer for you to buy your queens of some company that has a resistant strain of Italians. It would seem best for you to wait until about June 1 before you begin to make the colonies queenless. In this way you would build up the colonies, providing the European foul brood is not too bad.

Had you known, it would have been very much better for you to introduce a resistant strain of Italians last fall when the colonies had no brood in the hive and when they would clean up.

Yes, you would be able to get a crop of honey next season.

W. J. N., Amherst, Mass.—In running for extracted honey, what are the various methods employed for getting the combs cleaned up after extracting? Which of these methods are considered the best and why?

A. It is the usual practice to keep the combs whirling in the extractor until they are as clean of honey as it is practical to get them by centrifugal force. If the extracting is during the midst of the honey-flow, and the combs are to be filled again, they are put back into the hives just as they are. If it is the last extracting of the season, and the combs are not put back on the colonies they may be stacked up in empty supers in the honey-house, wet. This does no harm, and they can be given to the bees next year. But there is one objection to this. If the bees ever get into the honey-house and get at these combs it would start furious robbing. Some, however, at the last



extracting, stack the combs up in supers, placing them crosswise and let the bees rob them out clean before they are put away for the fall and winter. This makes

more or less of an uproar in an apiary, but usually does no harm, provided, of course, there is no foul brood in the yard, either American or European. The practice, however, is always attended with some risk, because one never knows whether his yard is entirely free from disease.

J. R. W., Washington.—Can you give a reason why a queenless colony above a queen-excluder and bee-escape board, as described on page 96, will not develop laying workers while the same colony placed on a stand by itself will?

A. It is never quite safe to make a hard-and-fast rule in regard to the behavior of bees, for now and then some colony is bound to break it. However, we should not expect the colony described on page 96 to develop laying workers, for their condition is so nearly that of a normal colony. They have good queen-cells in process of construction, and they have a daily accession of young bees—two conditions that are usually lacking in colonies that produce laying workers. It seems quite likely, also, that the daily passing of queenright bees thru their hive might be a partial cause of their immunity from laying workers.

R. L. B., Ohio.—Sugar being scarce, and high in price, a neighbor of mine is experimenting by feeding 20 hives of bees on glucose. What, in your opinion, will be the result—bees supposed to have no other winter stores, on their summer stands, and are seldom confined to their hives over three weeks without a flight.

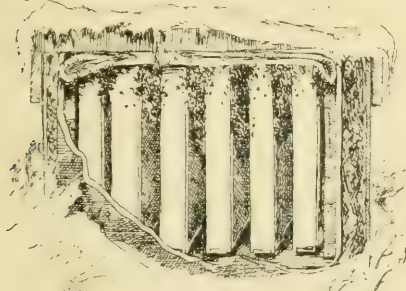
A. We believe that that neighbor of yours could obtain sugar for feeding if he explained to the grocer that its lack would mean starvation for his bees. Our experience has shown that it is almost impossible to induce bees to take raw glucose. We have poured it all over the combs, and even then they would not take it. It has so little sweetening power that the bees would starve to death even if they took it. It would be almost sure to cause dysentery, if they would eat it, and should be avoided by all means. Grape sugar, a similar product made from corn, is much better. It could be used to stimulate bees in the spring to very good advantage; but, dollar for dollar, granulated sugar is cheaper. Brown sugar, if light in color, is all right for winter stores. The dark-brown sugar should be avoided, but it would be far preferable to either glucose or grape sugar. Grape-sugar feeding is questionable practice even when it can be used immediately for stimulating brood-rearing. It is not suitable at all for winter stores.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Mother Bee NURSERY RHYMES By MGP (Mother Goose Plagiarized)



*The North wind doth blow, And we shall have snow,
And what will the workers do then, poor things?
They'll cluster on comb, And stay close at home*



*Keeping warm by beating their wings
Poor things!*

The Newspaper Plan of Uniting Colonies

colonies, and I hope I may be pardoned for saying that I disagree in a number of particulars. I have practiced this mode of uniting for the last six or seven years, doubling up from fifty to 100 colonies each year. During this time, in only a very few cases have queens been killed by the bees, and in every such case it was at a time when the weather was cold and rainy and the bees were cross hybrids.

I agree that if the weather is hot and the top colony is strong it is advisable to make a small hole thru the paper to prevent smothering, so also if the colonies are weak and the weather cold, as it will then take them too long to gnaw thru. Under ordinary conditions, however, I do not find it necessary or even desirable to make such an opening.

It is not necessary to kill either queen if there is no choice between them and if no excluder is used. The queens will fight it out after the paper is eaten thru. If one queen is of better stock, or otherwise preferable, do it this way: Place a sheet of newspaper and a queen-excluder over the better colony with the paper under the excluder. Remove

I note an editorial in November Gleanings regarding the newspaper plan of uniting

the queen from No. 2 and set it on top of No. 1. (Beginners will take notice that the cover of No. 1 and the bottom-board of No. 2 are also removed.) If the weather is warm and nectar coming in, queen-cells will be very apt to be started in the upper hive, and the bees may swarm if not attended to; so it is advisable to remove cells within ten days. But if the nights are cool, swarming is not likely to take place, even if cells are started.

Don't cage the queen. I see no reason whatever for caging the queen unless, perhaps, to protect her from the bees, and experience shows that not once in a hundred times will they molest the queen if the work is properly done. We know that bees usually become more belligerent when the weather becomes cool in early fall, and more care must be exercised especially if they are hybrids; but even then the percentage of loss will not warrant caging.

By doubling colonies in this manner in August the workers of use in storing the fall crop die off before winter. In this way the expense of wintering a large number of colonies is avoided, and in spring the apiary can again be built up to normal. As the young bees emerge, the cells are filled with honey. A goodly number of these supers of honey should be reserved for fall and spring feeding. After supers are taken off, some colonies may lack stores and the full combs can then be inserted in place of empty ones. A still easier way is to leave a partly filled super of honey on top of each light-weight colony; and if the weather is not too cold for them to work, the bees will soon carry down the honey that is not capped.

If queens are reared from our best stock during summer, and the nuclei built up to full strength by August, we can eliminate much of our undesirable stock by destroying the old queens and placing the hives upon the new colony as explained above. In this way, also, the young colony is made strong for winter.

Eugene S. Miller.

Valparaiso, Ind., Nov. 1.

Syrup not Supposed to Run Out by itself from Boardman Feeder

1. In regard to the Boardman feeder, the cap, as you know, is perforated with but three small holes.

Now, I find the syrup and water does not come out as it should. Is it meant that the bees should put their tongues up into the holes, or should the syrup run out slowly? If the former is true, then only three bees can feed at once. If the latter is true, why doesn't it work as it should? I have enlarged the holes, but to no avail. The bees cannot get at it.

2. You say that the division-board feeder

HEADS OF GRAIN FROM DIFFERENT FIELDS

should be placed in the brood-nest. Now, if it is placed in the center of the brood in warm weather I should think that it would hinder the queen's easy passage and would cut off one part of the brood, especially in case of a nucleus. And, again, if placed at the outside of the nest it would be too far away in cool weather.

3. I have been told by others that bees would resent my examining them often, and that they would not do as well. Is that true? How often can bees be examined without dissatisfying them? They do not seem to notice my presence.

4. If the bees are placed in the cellar, would daily walking by them disturb them? Chicago, Ill. L. Bellman.

[The Boardman feeder as it is sent out is designed to give a small amount of feed slowly. Slow feeding stimulates brood-rearing, while fast feeding unnecessarily excites the colony. In case of a very strong colony, it may be necessary to punch two or three more holes; but usually three holes are enough for a medium colony. Bees will get the feed out fast enough by inserting their tongues into the holes. Several bees can feed at the same hole.

2. A division-board feeder should be placed a little to one side of the brood-nest—usually about two frames from the outside. If the colony is strong, it may be placed at the very outside.

3. A good deal depends on who is examining the bees. An inexperienced person may make the colonies worse each time he opens the hive; but a good beekeeper, or a beginner who has read the directions carefully, can open a hive as often as he pleases without stirring up the bees or hindering their work provided that the manipulation is done during the middle hours of the day when the air is warm. Queen-breeders know that colonies, frequently opened, seem to become used to the operation, and such will often permit one to open the hive without smoke.

4. Bees in the cellar should not be examined more than is necessary; but a constant rumbling noise overhead during daylight hours seems to do no harm.—Ed.]

An Appreciation of I was very sorry to hear of the death of the Long Idea Hive.

Mr. O. O. Poppleton.

His hive is one that I have tried, and like very well. Really it is a time-saver in many ways, the only hive for migratory beekeeping, so much practiced at the present time. It so is so quickly loaded onto the truck, and moved, that, should I ever have bees in the South, I believe I would use this hive entirely. For next season I plan to have five, each holding 36 Jumbo frames. True, one man cannot move these;

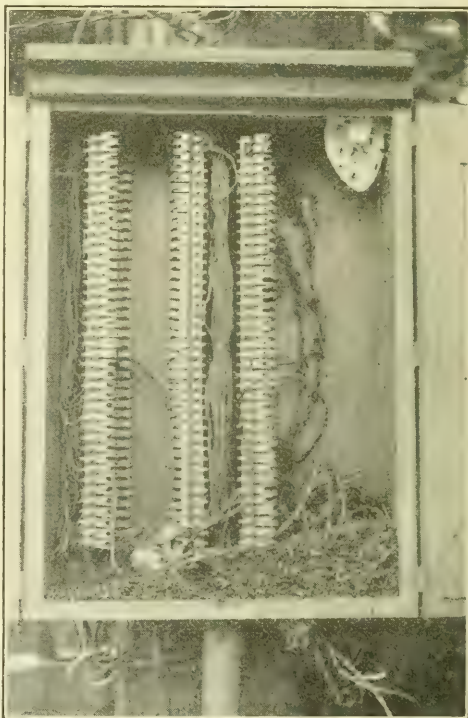
but to move many of the regular hives any distance, loading and unloading, the help of another person is usually required. While he who advocated this hive has passed away, yet it will be adopted by many besides the writer.

Point Pleasant, Pa. H. W. FULMER.

Why the Buzzing on the Line Stopped

The accompanying illustration shows a telephone cable-box at Port Byron, N. Y., in

which a colony of bees began work. Instead of saving this valuable asset, "poisonous gas" was used for their extermination by C. W. Weston, manager of the Port Byron Telephone Company. He pointed out that, had he been in the honey business, he might have welcomed the visit of a full-sized swarm of bees which took refuge in the company's terminal box located on the main



Telephone cable-box occupied by a swarm of bees.

street of the village. After taking counsel with the local physician and druggist, and receiving no satisfactory advice, Mr. Weston states that his mind wandered back to the old days on the farm where on one occasion he had been compelled to test conclusions with several skunks. He procured some bisulphide of carbon, and with it saturated a

HEADS OF GRAIN FROM DIFFERENT FIELDS

handful of cotton waste and packed it in every aperture of the terminal box. The next evening it was found that the fumes had done their work.

Buffalo, N. Y.

Frank C. Perkins.



County Agent Starts Bee Clubs

"I find that boys take as kindly to bees as to pigs and chickens when their interest is aroused," says Bruce Anderson, county agent of Forsyth County, North Carolina. He is the first demonstration agent in the South to include lessons in bee culture as essentially a work of the county agent. The United States Farmers' Cooperative Demonstration Work has recognized the value of his efforts, and provisionally incorporated beekeeping instruction to farmers in his demonstration-work program.



Bruce Anderson, county agent, in his own bee-yard.

It was in the spring of 1914 that Mr. Anderson began an effective campaign to revive bee culture in Forsyth County. His twenty years of personal experience was, of course, a valuable asset. He organized twenty men and women into a county beekeepers' organization. So the plan of instruction in bee culture was carried from farm to farm by the county agent. The original one-unit organization was broken up into numerous clubs.

Splendid results were achieved. The

membership in the bee clubs numbers 52, more than doubling within a year. The work has branched out to five other neighboring counties. The agent states that he is unable to answer all the demands placed upon him for help and information.

Durham, N. C.

S. R. WINTERS.



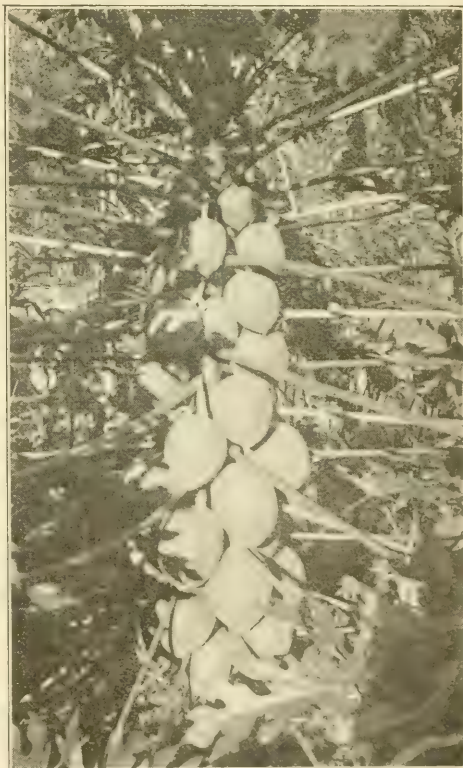
Numbering the Covers Instead of the hives.

I used to number my hives so as to keep a record or to refer to each one easily; but when I sometimes took a colony out of one hive and put into another the number had to be changed and it made confusion.

I now have a better way. I put the number on the gable end of the cover, front and back. No matter where the colony of bees goes, it is an easy matter to let the number go with them—simply a matter of changing covers.

Noosack, Wash.

Alson W. Steers.



One of J. Alpaugh's papaya trees at Lakeland, Florida. This shows that the papaya tree as pictured on the November cover can be grown in Florida as well as in Cuba.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Shredded-Wheat Boxes for Winter Cases

The description of the Demuth winter case and the statement regarding its low cost have led me to submit a sketch and description of the winter case I use and which I believe may be more cheaply made where shredded-wheat cases are obtainable. These boxes are 15½ in. wide by 24½ long by 17½ high, and they may be purchased at almost any grocery for ten cents each. Two of these nailed together (after removing one long side on each) with strips on the inside make a fine case for one ten-frame hive, the size furnished being 24½ in. wide by 31½ long by 17½ high. The material is of ¾ stuff, white pine, matched, smooth on the outside and is very well put together. I line the cases with a number of thicknesses of newspaper and also make a ¾-inch-thick pad of newspaper 14x24 to fit underneath, and between sides of bottom-board. No other packing is used under the hive, but a few extra thicknesses of newspaper are used in the bottom lining of the case. Covering the hive-body is a queen-excluder which keeps the burlap and packing in super away from frames. I use elm leaves gathered from my lawn for the packing, and find them very good. The packing space around hive is 4 and 5½ in. as shown.

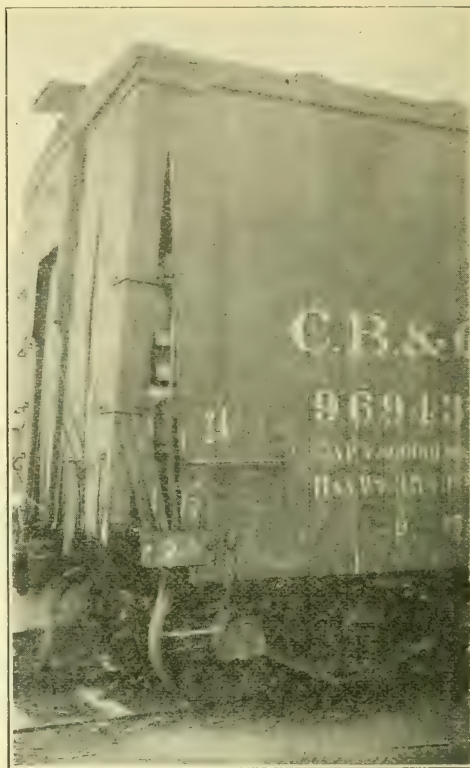
Before beginning to pack I cover the entire sides with a half-width strip (16 in.) of tar paper. When packed the covers of boxes are laid on without nailing, and then covered with a tar-paper sheet of 32x42 in. which laps well down on the sides and is then tacked every 3 in. with ¼-in. tacks which are easily removable when unpacking. I do not cover the bottom.

The cases are set on the summer stands, giving pitch of about 1½ inches to shed water.

WILLIAM L. FUCHES.

Buffalo, N. Y.

[Near the larger cities these wooden shipping-cases would probably be available. We cannot get them in Medina. Heavy straw-board cases are used for shipping.—Ed.]



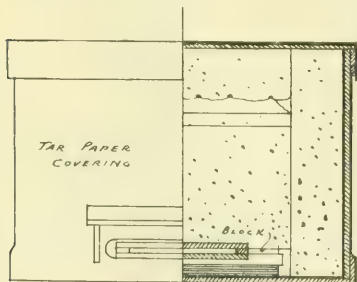
Why honey needs solid bracing in a car. In this instance the car was bumped so violently that the honey went right on thru the end.



Large Lemon Grove Covered with Netting.

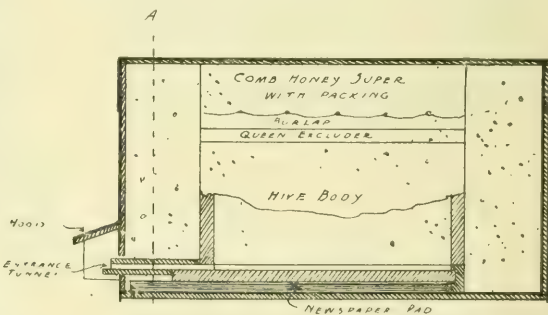
For the purpose of experimenting, a six-acre lemon-grove was covered with tobacco

cloth, a strong kind of mosquito-netting. The covering was about sixteen feet high, and was supported by wire and posts. This, I thought, would be a fine chance to try matting, fertilization, and purity of lemon honey.



ONE HALF ELEVATION
OF FRONT

ONE HALF SECTION
ON LINE A-B



B

SECTION THRO LENGTH

Shredded Wheat shipping-box used for a winter case.

HEADS OF GRAIN FROM DIFFERENT FIELDS

One strong colony and one of medium strength were placed in the grove and given sections of drawn combs. In a short time the strong colony filled twelve or fifteen sections quite full. But both colonies dwindled very rapidly, and in a few months died out entirely. So far as I could learn, the cause was the close confinement and lack of pollen. If artificial pollen had been supplied, I believe it might have helped somewhat.

The honey was very light, of an excellent flavor, but with none of the tartness of the lemon.

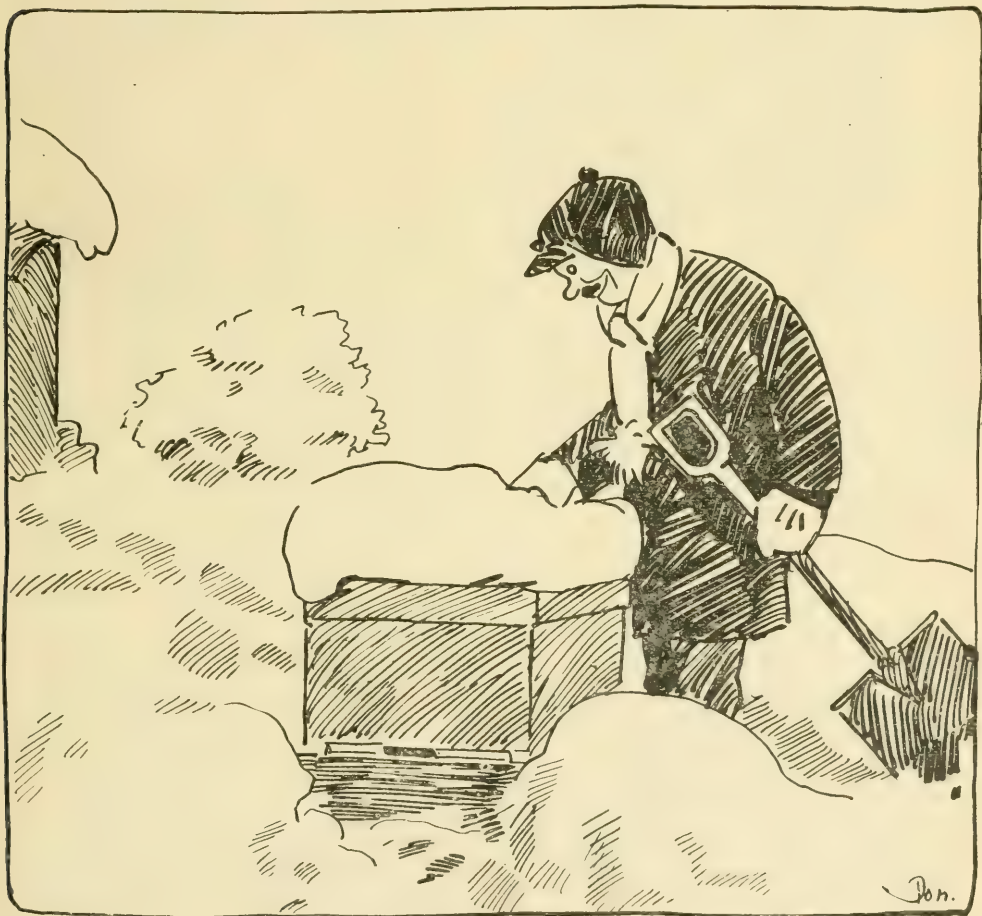
I was told by the manager of the grove that the trees increased their yield four-fold while under the covering, and dropped back to the old amount when it was remov-

ed. While I feel that bees are a great agent in the fertilization of the lemon blossom, the experiment was not continued long enough to prove anything conclusively, as an unusually heavy wind tore and wrecked the structure so that it was decided to remove it. The lemon having some bloom at all seasons of the year, with more during the early spring, led me to think this an excellent chance for experiment.

The owner hoped with this covering to get a more even temperature—warmer in winter and cooler in summer. It is possible that they may again try the experiment, in which case I will endeavor to continue my investigations.

Corona, Cal.

L. L. ANDREWS.



THE BACKLOT BUZZER

BY J. H. DONAHY

Benny Sourweed, who stutters some, says his nephew, over in France wrote him, that one of them Hun-Hun-Hua-ee-bees, stung him right in the eye.

THE annual meeting of the National Beekeepers' Association will be held at Burlington, Ia., on Feb. 19, 20, 21, 1918. John C. Bull, secretary-treasurer of the National, sends word that the meeting will be held in the Remy Hall, which is one of the finest in the city, and that the program that is now being arranged will be sent to Gleanings in time to appear in full in the February number.

The annual meeting of the New Jersey Beekeepers' Association will be held at Trenton, on Jan. 24 and 25, 1918. Among those who will speak are Dr. E. F. Phillips, Editor E. R. Root, S. D. House, and N. L. Stevens. This meeting is held during agricultural week, in conjunction with the allied agricultural meetings. A large attendance is expected.

Word comes from Cuba that the honey crop will be short on account of the exceptionally cold weather that the Island Republic has recently had. During the last three weeks of November the temperature was continually below 70, which was an unusually long and cold spell of weather for Cuba.

L. V. France, of the College of Agriculture, University Farm, Minn., is sending out a warning that the bees of Minnesota will need special care this winter. He says that many beekeepers have already fed sugar syrup to bees that have not enough stored food. The Minnesota State Beekeepers' Association will meet to discuss methods of keeping up the honey production of Minnesota for the period of the war and longer, at University Farm, Jan. 4.

The second annual meeting of the Arkansas Valley Beekeepers' Association met at Wichita, Nov. 23, for a two-days' meeting. Kansas is divided by beekeepers into four districts, membership in each of the district associations carrying with it membership in the state association. The program was furnished by members of the local association, with one exception, that of Frank C. Pellett, of Atlantic, Ia., whose lantern-slide lecture on the evening of the 23d was both interesting and profitable. At the close of the session at 12, Saturday, Nov. 24, the members present partook of a honey banquet of which all the dishes were prepared with honey.

The Massachusetts State Board of Agriculture will hold one of its biggest meetings at Worcester, January 8, 9, and 10. The program includes speakers of national reputa-



tion. Beekeepers, as well as farmers, cannot afford to miss it. Wednesday, Jan. 9, at 1 p. m., the beekeepers of Massachusetts will meet in the library of Horti-

cultural Hall to discuss matters of general beekeeping interest.

Beekeepers of Florida are taking an increased interest in organization, the best evidence of which was the Tupelo Honey Exchange which came as the result of the meeting held at Wewahitchka, Florida, by Georgia and Florida beekeepers on the Apalachicola River. J. J. Wilder, of Cordele, who was elected president, was the principal mover in the work.

The Ontario Co., N. Y., Beekeepers' Society will hold its annual meeting at Canandaigua, N. Y., courthouse on Tuesday, Jan. 15. F. Greiner, Naples, N. Y., is secretary, who will be glad to give further information.

Price Committee of Chicago-Northwestern Association.

At the 1917 convention of the Chicago-Northwestern Beekeepers' Association held in Chicago, Nov. 30, Dec. 1, the following important resolution was adopted.

"Whereas, the committee appointed at the 1916 meeting of this association for the purpose of investigating conditions for marketing honey and for recommending to producers a schedule of minimum prices for the season of 1917, has performed its work to the satisfaction of the association, resulting in more fair and more uniform prices to the producer; therefore be it

"Resolved: That the work of the committee be continued thru the season of 1918 and extended in so far as the funds of the association will permit, and that the president be empowered to appoint the members of such committee."

The following were appointed as Committee on Prices for 1918: John C. Bull, Sec.-Treas. Chicago-Northwestern Beekeepers' Association, Valparaiso, Ind.; E. D. Townsend, Northstar, Mich.; L. C. Dadant, Hamilton, Ill.; Edward Hassinger, Jr., Greenville, Wis.

In discussion of the resolution it was shown that the purpose of the committee is not to boost prices to an unreasonable or exorbitant figure, but to keep producers informed in regard to reasonable retail prices for their product and in this way endeavor to overcome the practice among uninformed beekeepers of retailing honey at or below wholesale or jobbing prices. A canvass of the members of the association present at the convention showed that nearly all were obtaining prices for their honey not less than those recommended by the committee; whereas, a year ago a similar canvass show-

ed selling prices varying from 10 to 25 cts. a pound.

All interested in receiving reports and price recommendations of the committee should write to Mr. Bull.

E. S. MILLER, Pres.

Valparaiso, Ind., Dec. 6, 1917.

Recent State Beekeepers' Conventions.

With the exception of two, the Editor of *Gleanings* has attended all the state conventions up to the first of January. Generally speaking, the attendance was a little below that of last year, owing perhaps to the fact that the honey yield was not as large in 1917 as in 1916. It is a very noticeable fact that the attendance at conventions bears an almost direct ratio to the amount of honey secured during the season. Another factor which worked against large attendance this year was the difficulty of travel on account of so many trains being taken off and others overloaded. Practically every train that took us to conventions was anywhere from two to five hours late; and the result was that we were able to be present at only one or two sessions of each, and had to skip two conventions altogether.

The Ohio meeting held at Lima, that of the Ohio Beekeepers' Association, was the smallest of any of the conventions we attended—but the enthusiasm was good.

The attendance was larger as we went westward, as the honey yield had been. The convention at Des Moines was about the same in size as that of last year. The Minnesota meeting was the largest one of this winter, some of the sessions having an attendance of 300. The convention at Madison was not quite as large, but in point of enthusiasm and papers read it was one of the best we attended. This association has started out on a propaganda of cleaning foul brood out of the state.

The Indiana State Beekeepers' Association held its annual meeting in the State House in Indianapolis on Nov. 26 and 27. Owing to the short crop and bad weather the attendance was not as large as expected. However, it was an enthusiastic meeting and several interesting talks were given. The writer was unable to attend, but was represented by J. A. Warren, who gave a very interesting talk on "Markets." Prof. D. A. Rothrock, after making a careful investigation on honey production, gave figures that would seem to indicate that the government estimate of 49 lbs. for Indiana was too high.

The Michigan Beekeepers' Association meeting was held at Saginaw, Nov. 27 and 28. The number of members attending was small for Michigan, owing to poor train service, nearness to Thanksgiving, and the short crop this year. Floyd Markham, of Ypsilanti, won the manufacturers' gold medal for the third time, and it thus became his permanently. Upon solicitation of Mr. Tyrrell, of Detroit, a committee was appointed

who will have charge of the making of an exhibit of bees and honey at the state fair. The exhibit will be furnished by members; and after the fair it will be sold and the money returned to those who furnish the exhibit. All exhibits of honey will be made in uniform containers which will be furnished by the committee. A banquet was enjoyed on the evening of Nov. 27. The next annual meeting will be held at Battle Creek.

The Syracuse meeting of the New York state beekeepers we were not able to attend, because it came in direct conflict with the dates we had previously made for Minneapolis and Des Moines, but we are informed that the attendance was good.

The last meeting of the series was held at Toronto, Canada. The number present was about the same as that of last year, and the enthusiasm was above par. The Toronto meeting had its usual banquet that was one of the best we have ever attended. The province of Ontario is doubtless ahead of any state in the Union in the amount of honey produced, and also in the number of large producers, unless it be California.

At all the meetings that we attended there was a feeling that 1918 is going to be a big year for high honey prices, and possibly for a large yield. Every beekeeper present seemed to feel the importance of speeding up, because it is a case of now or never.

The newly elected officers of the various state conventions, so far as we have been able to get them, are as follows: Ohio—E. M. Caldwell, Defiance, president; J. E. Varnard, Wilmington, secretary. Illinois—Dr. A. C. Baxter, Springfield, president; James A. Stone, Springfield, secretary. Indiana—Mason J. Niblack, Vincennes, president; R. B. Scott, LaGrange, secretary. Iowa—B. T. Bleasdale, Des Moines, president; Hamblin B. Miller, Marshalltown, secretary. Minnesota—Prof. A. W. Rankin, Minneapolis, president; L. V. France, St. Paul, secretary. Wisconsin—N. E. France, Platteville, president; E. D. Hassenger, secretary. Michigan—B. F. Kindig, East Lansing, secretary. Ontario—James Armstrong, Selkirk, president; P. W. Hodges, secretary.

An increase of \$15,000 to the regular appropriation for the apicultural department of the U. S. Dep't of Agriculture was granted by the Secretary of Agriculture last fall, to stimulate honey production as a war-food measure. This action has enabled Dr. E. F. Phillips to appoint a number of special field agents, who will carry on extension work thruout the country, and especially in the West and Pacific Coast region. E. F. Atwater of Meridian, Ida., is one of the additional field agents appointed, and will have his special field in California, Arizona, and New Mexico. We understand that P. C. Chadwick, of Redlands, Cal., and Mr. Erbaugh, of Indiana, are among other appointments made, the latter to do work in Illinois.

SOME time ago our old pastor, Rev. A. T. Reed, paid a visit to our Medina people after an absence of several years. In shaking hands with different ones of his old friends he made the remark to one of them, "Why, my good friend L., you do not seem to have grown *any smaller* since I knew you years ago."

Perhaps I should remark here that L. always was a pretty good-sized man—good-sized particularly sidewise instead of endwise; but what I want to speak of just now is the reply that L. gave to his old minister. It was something like this:

"It is true, Mr. Reed, that I am but little if any smaller than I was years ago when you knew me so well; but if I am *not* any *smaller* than I used to be, I am a great deal *better* man than I used to be."

Of course, this was meant as a joke, and there was a big laugh all around among the bystanders. I think I laughed heartily with the rest. But the words of our good friend L. have been following me more or less ever since. Can I say of myself just now, and say it truthfully, that I am a *better* man than I "used to be"?

Now, dear friends and readers of GLEANINGS, how is it with *you*? and I put this question not only to the men but to the women also—can you or can we answer truthfully, the question, "Are you and I better than we used to be?" If not, is it not high time (before we get to be any older) to set about the serious work of getting to be better husbands, better wives, and better fathers and mothers than we used to be? In other words, to put it short, are we growing in *grace* as we grow in years? To come right down to self, I honestly believe I am making *some* improvement; but, oh dear me! when I think of the impatient and wicked thoughts that come into my mind I feel almost discouraged. Again and again I feel the necessity of using that little prayer, "Lord, help!" and then the other one, a little longer, "Create in me a clean heart, O God, and renew a right spirit within me."

I am going to tell you one of my besetting sins, and may be it is also one of yours.



Charity doth not behave itself unseemly, seeketh not her own, is not easily provoked, thinketh no evil.
—1. COR. 13:5.

Search me, O God, and know my heart; try me, and know my thoughts; and see if there be any wicked way in me, and lead me in the way everlasting.
—PSALM 133:23, 24.

It is this: To yield to the temptation to criticise and find fault with my friends and neighbors. When we sit down at the table, if we are not careful we get to commenting on somebody and speaking unkindly of the absent ones. I wonder if my

friends and neighbors ever discuss A. I. Root in the same way, and speak of his faults and failings. I wonder if it ever occurs to them how badly hurt I should feel if I should happen to overhear some of their comments. And, again, how hurt they might feel if they knew how I have at times been criticising *them*. I think I heard somewhere an injunction something like this: "Never say a thing behind a person's back that you would not say to his face;" and I have sometimes wondered if there is *anybody* who lives up to that strict rule. Now, please do not misunderstand me. There are certain things that must be discussed and talked over before we go to the person and kindly plead with him. Perhaps a child has been going wrong. It is certainly well and wise for the father and mother to talk it over, and get all the facts possible before dealing with the delinquent himself. It has been suggested that, instead of discussing the absent one's faults and failings, we should go directly to him and say what needs to be said. But, dear friends, if you have ever tried it you probably know that it is "ticklish business," if I may use the term. You are very likely to do harm instead of good. Let us turn it around the other way. If some friend comes to you, even with the best intentions, and tells you of your shortcomings, are you sure you will take it all right? An illustration occurs right here. When I used several pages a while ago to warn people about investing in a potato-pen (see page 559, July) some good friend reminded me of the space I had occupied to expose a fraud in "war gardening," and I confess I felt hurt, at least a little, especially since it has turned out as he said. I might remark right here that the best potato-pen in Medina (and there are several of them) promises to yield perhaps thirty or forty *quarts* instead of bushels, and the potatoes are small at that.

Well, friends, how are we going to go about it to become better men and women than we used to be unless somebody is kind enough to tell us of our faults and besetting sins? As a rule we shall never recognize them unless somebody is kind enough to call our attention to them.

Years ago I read a fable to the effect that everybody carries with him two sacks—one always in front and the other always behind, strapped to his back. As he goes along he notes the faults of his neighbors and puts them into the sack right before him. His own faults he throws over his shoulder into the sack behind where he soon forgets all about it, because he cannot see them. The faults of his neighbors are right before his face where he sees them constantly. Now, I did not know until quite recently that the good old Bible tells us *exactly* what to do in order that we may be better men and women than we have been in years that are past and gone. It is one of the little texts that come to me every now and then as if it were written across the sky in letters of gold. I have read the 139th Psalm a good many times; yes, and I have heard read the two concluding verses, but I did not think much about it. I think it was, perhaps, in the nighttime when I was considering this very matter of being a better man than I had been, that these precious verses came suddenly up before my mental vision—"Search me, O God, and know my heart; try me, and know my thoughts; and see if there be any wicked way in me, and lead me in the way everlasting." That was David's prayer, away back ages ago; and even if he was, on one occasion, a sinful and wicked man, these verses imply that he had repented; and, oh what a repentance that must have been! Recognizing his evil nature when unrestrained by the grace of God, he gives voice to those beautiful words. Dear reader, can you on bended knee unite with me in saying, "Search me, O God"? and then, again, "Try me"? That would mean subject me to temptation and see whether I should come out victorious; and that final thought, "and see if there be any wicked way in me."

I have just been getting beans from my war garden. I thrashed them out, and then poured them from one big pan to another out in the wind. After I had got thru Mrs. Root picked them over. If I take great pains and make a good job of it she has very little trash to pick out except the beans that have become stained or colored by the abundant rains we have been having. Well, after I am ready to submit them to her scrutiny, and spread them out, I look

them over very carefully to see if there is anything I have overlooked. Now in a similar way David prays that the Holy Spirit may *spread out* his inmost thoughts and look them over, and see if there be any "wickedness" that *he himself* has overlooked.

Suppose, dear friends, the whole wide world should make David's prayer their own. Can you—can any of us—conjecture what would happen? Suppose not only the "coal barons" and the grain speculators should ask God to point out to them *their* shortcomings, but suppose also the farmers, the publishers—yes, even the publishers of our daily papers—should go to hear Billy Sunday or some other evangelist, and should honestly get down on their knees and ask God to see if there is anything unneighborly in their lives or conduct. Why, it is a joke to suggest it; and yet, my good friends, we are all human and all selfish—every last one of us. If you are, each and all, as bad and wicked as your old friend A. I. Root (unless it be by fits and starts) you can honestly unite with me in saying, "May God have mercy on the poor sinful 'bunch' of all of us."

Dear friends, I am dictating this on the 8th day of October. As I do not have any stenographer down in my Florida home, and as I am often so busy down there that I do not get time to send in a Home paper, it occurred to me to dictate several ahead of time; and this one may possibly appear in the January number. If it does, it will suggest to you a way to start out the new year so that you can say not only to your fellow-men but to the great heavenly Father also, "I honestly believe I am a better man (or woman) than I *used to be*."

(The sequel to the above Home paper will be found in our issue for February.)

SOMETHING ABOUT "ENLISTING."

Every little while since that Home paper, the question keeps coming up again, "For whom are you working?" Some good friend has just sent me a little tract that just "hits the spot." Here it is:

SURGEON'S LAST SERMON.

The closing characteristic words of Mr. Spurgeon's last sermon on June 7, 1891, were as follows:

"What I have to say lastly is this: How greatly I desire that you who are not yet enlisted in my Lord's band would come to him because you see what a kind and gracious Lord he is. Young men, if you could see our Captain you would go down on your knees and beg him to let you enter the ranks of those who follow him. It is heaven to serve Jesus. I am a recruiting sergeant, and I would fain find a few recruits at this moment. Every man must serve somebody; we have no choice as to that fact. Those who have no master are slaves to themselves. Depend upon it, you will either serve Satan

or Christ, either self or the Saviour. You will find sin, self, Satan, and the world to be hard masters; but if you wear the livery of Christ you will find him so meek and lowly of heart that you will find rest unto your souls. He is the most magnanimous of captains. There never was his like among the choicest of princes. He is always to be found in the thickest part of the battle. When the wind blows cold he always takes the bleak side of the hill. The heaviest end of the cross lies ever on his shoulders. *These forty years and more have I served him, blessed be his name! and I have had nothing but love from him.* I should be glad to continue yet another forty years in the same dear service here below, if so it pleased him. *His service is life, peace, joy.* Oh that you would enter on it at once! God help you to enlist under the banner of Jesus, even this day. Amen."

I wish especially to emphasize the words, "You will find sin, self, Satan, and the world to be hard masters; but if you wear the livery of Christ . . . you will find rest for your souls." Spurgeon says he gives the above after an experience of over forty years or more. Well, dear friends, it is just about forty years since I enlisted under the banner of the meek and lowly Nazarene; and I can give a loud amen to what Spurgeon says in the above. It has been just my experience. Let me repeat again what he says in closing: "God help you," my friend, "to enlist under the banner of Jesus, even this day."

Since we have been sending out so many thousand of the little tract, "How to Be Happy," etc., tracts have been coming in return from the various tract societies thru-out our land. Of course I did not have any idea there were so many. Such a great number of tracts have been submitted that I

can hardly take time to glance over all of them; but my conscience troubles me if I do not take at least a brief look at the various ones submitted. I have just now run on to a gem. Please notice the 11th and 12th lines how wonderfully it comes in with my tract, "How to be Happy when People Abuse You." Here is the tract. The italics are my own. May God bless this message.

THE HOUSE INSIDE

I have a house inside of me—
A house that people never see;
It has a door thru which none pass,
And windows, but they're not of glass.
"Where do you live?" ask folks I meet;
And then I say, "On such a street;"
But still I know what's really me
Lives in a house folks never see.
Sometimes I like to go inside,
And hide and hide and hide and hide,
And "doctor up" my wounded pride
When I've been "treated rough" outside.
And sometimes, when I've been to blame
I go indoors and blush for shame,
And get my mind in better frame,
And get my tongue and temper tame.
I meet my heavenly Father there;
For he stoops down to hear my prayer,
To smooth my brow and cure my care,
And make me brave to do and dare.
Then, after I have been made strong,
And have things right that were all wrong,
I come outside, where I belong,
To sing a new and happy song.
Then I can hear the people say,
"You're bright and bonnie, good and gay,"
And it's because I feel that way;
But they don't know the price I pay.
You have a house inside of you,
Where Christ will fight your battles too.
God's word will tell you what to do,
And make your heart clean, kind, and true.
—S. W. Grafflin.



HIGH - PRESSURE GARDENING

HIGH-PRESSURE POTATO-GROWING.

Dear Sir:—Enclosed you will find a clipping taken from the Kingsville Reporter, of which staff I am pressman. I live on the lot adjoining that on which these potato sprouts were planted and grown; and if I had been told that potato sprouts would stand the amount of rain these got, and then yield as fine a crop as was dug from them I could have hardly believed it. Now just a few lines to those who want to make their potatoes go a long way. Why not take berry-boxes and plant the sprouts in them, say four in each box; and then when the weather permits plant them in the open ground? By so doing one could have early potatoes and still have the original seed for late planting.

E. M. ANSON.

Kingsville, Ont., Canada, Oct. 29, 1917.

Below is the clipping referred to:

POTATOES FROM SPROUTS.

In our boyhood days we were always given to understand that potatoes would not grow from sprouts detached from a potato, as the potato furnishes nourishment for the sprout and is necessary

for its growth, and that the larger the potatoes the better would be the new crop. This idea, like a great many other things that are being thrown aside today as erroneous, has been disproven by Mr. Colin Quick, of this town. Last spring he broke sprouts from his potatoes and planted a lot; and when he dug his crop this fall, he found that the sprouts had produced fully as fine tubers as those grown from potatoes. Samples of the sprout-grown article may be seen on our office table. The potatoes from which the sprouts were taken were then cooked and used in the usual way. Mr. Quick says that seed can be multiplied three times by taking off first sprouts, letting a second lot come out, taking them off, and then cutting and planting the original potato.

My good friend, what you advise is exactly what I was doing last winter in my Florida garden when I grew two good crops of potatoes on the same ground in one winter. Yes, you *can* grow good potatoes from sprouts, providing you have very rich soil

and a good long season; but you will get a great deal quicker result by the plan I gave last winter. Instead of letting your good-sized potatoes sprout in the cellar or somewhere else, put them in a greenhouse; or, if you cannot do any better, in a box in the window in the very best of rich compost. When the sprouts get to be two or three inches long (and perhaps have some little green leaves) instead of pulling off the sprouts, cut a little piece of potato with it, with the bushy roots adhering, and some of the rich soil also; and I would put just one of these in the strawberry-box until the weather would permit of putting them outdoors. When you cut out this little potato-plant you can put the big potato back again, and (later on) get more potato-plants; or you can use the big potatoes for table use and still have the seed for planting. In this way I have made one large potato give a dozen good strong thrifty plants, and in due time I had a dozen good hills of potatoes, and these were all or nearly all large because they were grown on Terry's single-eye system. Potatoes are already worth \$1.75 a bushel here in Ohio on this first day of November. I

think they retail for about 50 cents a peck, and the probability is it will pay big to start potatoes next spring in the greenhouse, hotbed, or cold-frame, or in a box in the window if you cannot do any better.

THE ALGAROA-TREE OF THE HAWAIIAN ISLANDS.

When I saw that wonderful story of algarobas giving 200 tons of honey, (GLEANINGS for January, 1917) I at once applied to the Reasoner Brothers, of Okeech, Fla., and to my happy surprise found they had the very trees in stock. Half a dozen were at once installed in my Florida garden, but the great frost the first week in February used them up. I have been planning to try it again this winter as soon as I get back. The matter was brought to mind by the following letter just received:

I should like to state that I have some Hawaiian algarobas growing. I have 7, and the largest is about 4 feet high. I got the information about the algaroba from GLEANINGS, January, 1917, and got my seed from Mr. Oswald St. John Gilbert, Honolulu, H. I. I will let you know how they stand the winter and how much they have grown by next spring.

Tampa, Fla., Sept. 5.

P. W. HAYS.



TEMPERANCE

PRAISE GOD FOR ANOTHER VICTORY.

The letter below illustrates the stuff that beekeepers the world over are made of:

Brother Root:—Note the great victory which we achieved in the election for our fair city. We had a pretty hard siege of it, in face of all the opposition; but united effort all along the line gained the point, which was lost at a recent election about a year ago.

Glendale, Cal., Nov. 21. GEO. W. BERCAW.

Below is the headline of the *Los Angeles Examiner* of Nov. 21:

VOTES OUT SALOONS BY NEARLY 20,000.

And here is something more that is encouraging from the *Tampa Times*:

BIRMINGHAM'S PROHIBITION EXPERIENCE
Just a few years ago Birmingham, the great rolling-mill center, was one of the "toughest" cities in this country, and none had a worse murder record. The wonderful strides of the city in an industrial way were offset by the unlawful conditions that prevailed.

But when prohibition became effective in Alabama, Birmingham began to reform, and today it doesn't "know itself." The changed conditions are shown by the police records and by the fact that Birmingham has recently offered a magnificent new jail to the government as a war hospital. Birmingham doesn't need the jail for the housing of wrong-doers, so it offers it to Uncle Sam for the housing of patriotic soldiers.

With such examples before them it is difficult to

understand why any people object to the drubbing that John Barleycorn has been given in recent years. Instead of objecting, it seems that they should adopt the motto, "Lay on, McDuff!"

"WE HAVE THE SAME BREED OVER HERE."

We clip the following from *The National Enquirer*.

BRYAN USES A SLEDGE IN ATTACK IN CITY OF BROTHERLY LOVE.

Among other things, Mr. Bryan said:

"We cannot afford to take bread from the tables of the world to make men drunk at a time when we dare not allow the impairment of our men."

"Uncle Sam has decreed that soldiers who are to fight for him must be sober. If it is good to save the strength of the soldier at the front by keeping from him the poison of alcohol, why is it not good to keep at a maximum the strength of the men behind him, the men who are producing food, making munitions and war supplies for the soldier?"

"We have a million men in arms today," he continued, and then changing quickly he asked: "Do you want to know who the disloyal men of this nation are? I'll tell you.

"If the brewers, distillers, and saloon-keepers of this country had their way they would make drunkards of all those million men in arms and leave us defenseless before a foreign foe."

He was greeted with thundering applause as he drove this home by telling of the experience in Great Britain when Lloyd George tried to close the saloons there.

"But the liquor men of England cried: 'Let the nation die first' when the saloon was threatened. And we have the same breed over here."

Can it be *possible*, dear friends, that we have those here in America that would say, "Let the nation die first," when the saloon is threatened?

THE LIQUOR BUSINESS AND THE WAR.

If I regard iniquity in my heart the Lord will not hear me.—PSALM 66:18.

Again and again I have been urging that the reason why God does not answer our prayers for peace is because we as a nation are still cherishing and regarding iniquity. We are accepting revenue from the liquor traffic; and not the United States alone, but the nations of the world—at least a great part of them—seem to be cherishing and holding on to this iniquity. From the clipping-sheet of the Methodist Board of Temperance of Nov. 3, take the following:

THE ITALIAN DISASTER ATTRIBUTABLE TO THE DRINK TRADE IN GREAT BRITAIN, FRANCE, AND AMERICA.

A few months ago an Italian mission in Washington was pleading for fuel and munitions. Everybody knew it. Also, everybody knew that practically nothing was being done for Italy because the ships were lacking.

The ships were lacking because material and labor was lacking.

Material and labor were lacking, according to the testimony of hundreds of industrial leaders, because drink was cutting the efficiency of labor and preventing its full-time effort.

If the French had prohibited the drink trade entirely at the beginning of the war, the Italian disaster would not have occurred.

If Great Britain had prohibited the drink trade a year ago, the Italian disaster would not have occurred.

If the United States had prohibited the drink trade in April, Cadorna would have been at Trieste and Laibach.

The chances that the war will end in 1918 are slowly glimmering out. Unless the nations opposing Germany stop their fooling now, and begin to make a full-time one-hundred-per-cent effort, only God knows when it will end.

It is true we have forbidden our soldiers here in America to drink, and we have forbidden saloon-keepers to sell them drink; but how about the drink business when they get over into France and other nations where there is no such prohibition nor any kind of prohibition? And, again, how about those left here at home to protect our homes and to provide food, fuel, and clothing? Is there any justice in cutting off the drink from those who go to war and leaving those who remain here at home to drink or not drink as they may feel inclined, as it has been in the years that are past? A temperance speaker, one of our own townsmen, in a temperance meeting on Sunday evening, Nov. 4, said if we retained our saloons, and peace should come, every sol-

dier who returns to our shores would be urged by saloon-keepers at every turn to come in and drink, free of charge. Shall this be permitted?

"BONE-DRY."

The food law authorizes the President to suspend at his discretion the manufacture of beer and light wines; distilled liquors are already prohibited. A movement is under way to bring strong pressure to bear on the President and Congress, to discontinue the manufacture of beer in the interest of food conservation. Food-pledge workers and workers generally for food conservation the past season frequently have been met with: "Why should we substitute and stint ourselves when so much grain is going into the making of beer?" And the resentment in this argument is uncontrovertible.—*Ohio Farmer*.

NO-TOBACCO LEAGUE OF AMERICA.

The above is the heading to a letter just received from The National Camp, Bethany, W. Va. It reads as follows:

Mr. A. I. Root:—You have been placed upon our mailing-list as one who is interested in the suppression of the tobacco evil, and we wish to do what we can to help you in your opposition to this traffic.

I enclose our third annual report, which should convince you that this effort will succeed—so we invite your co-operation. Can you not distribute some literature, get an appointment for a meeting, interest a church, a young people's society, or some individual or organization in this work? Send us your own remittance.

We desire to reach 50,000 children this year; but this can be done only by the co-operation of a large number of people. If your financial support is impossible now, may we not have a word from you saying what you can do? and may we not count on your prayer for no-tobacco?

H. T. SUTTON.

Bethany, W. Va., Oct. 25, 1917.

In response to the above I sent a small contribution. We are giving so much to the tremendous calls we are having that I could not well, just now, do more. Perhaps some of our readers can also help a little. Right along the same line I make a clipping from the Butler, Ind., *Weekly Record*:

They are already coming to it. The High-Y Club of Auburn discussed liquor and tobacco at its meeting last Thursday. Liquor and tobacco belong together, and their place is together—in the bottomless pit.

In Indiana alone last year \$50,000 worth of property is known to have been destroyed by careless smokers. In a Wisconsin city a lighted cigarette started a fire that caused losses amounting to \$150,000. This, is not the imaginings of an anti-tobacco crank, but the report of the Indiana State Fire Marshal.

TWENTY FIVE CENTS' WORTH OF "ENJOYMENT."

I am an admirer of A. I. Root, and I take much pleasure in reading articles from his pen. It is more of a temptation than I can resist to read articles written by him for the next four months, so I enclose a quarter. I know of no way in which I can spend 25 cts. and get more enjoyment from it than this.

W. G. BRAINARD.

Gouverneur, N. Y., May 15, 1917.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

Small lots of off-grade honey for baking purposes. C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

Honey in new 60-lb. cans at 16 cts. VanWynyarden Bros., Hebron, Indiana.

FOR SALE.—10,000 lbs. extra quality extracted honey in 60-lb. cans.

Thos. Atkinson, Cozad, Neb.

\$1.50 pays for a year's subscription each to the Domestic Beekeeper and Gleanings in Bee Culture. You can order them from either office as you prefer.

HONEY AND WAX WANTED

WANTED.—Comb and extracted honey. J. E. Harris, Morristown, Tenn.

WANTED.—260 lbs. of beeswax at 40 cts. per pound. Longfellow Bros., Hallowell, Maine.

WANTED.—To buy a quantity of dark and amber honey for baking purposes. A. G. Woodman Co., Grand Rapids, Mich.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

WANTED.—Beeswax. We pay higher than market price; let us know how much you have, and if possible send sample; get our quotation before selling your wax. Queen Mfg. Co., Falconer, N. Y.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

Chas. Israel Bros. Co., 486 Canal St., New York. Established 1878. Wholesale dealer in Honey and Beeswax. We buy Honey. Send us samples and the quantities you have, also your best price delivered New York. We pay the highest market price for clean, bright yellow beeswax.

Be sure and include the Domestic Beekeeper with your list of bee-journals for 1918.

The Domestic Beekeeper will help you to dispose of your crop of honey without expense to you; also buy your beekeeping supplies for you at cost. If you knew all we are doing for our subscribers you would certainly be with us during 1918 as a subscriber. Can we have the pleasure of entering your name on our subscription list? Address The Domestic Beekeeper, Northstar, Michigan.

FOR SALE

FOR SALE.—500 extracting-supers, nailed and painted, with frames. Will sell cheap. A. F. Stauffer, Delta, Colorado.

Beekeepers, let us send you our catalog of hives, smokers, foundations, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

SHELLED PEANUTS.—5, 10, and 25 pound packages, 15c pound, add postage. D. W. Howell, Shellman, Ga.

FOR SALE.—White sweet-clover seed, hand gathered. Write for quotations. E. C. Bird, Boulder, Colo.

FOR SALE.—Five double-walled hives, good condition, \$2 each; also 15 Falcon supers holding 35 plain sections. Price, with sections complete, 50 cts. each. L. F. Howden, Fillmore, N. Y.

Good second-hand shipping cases for 4 1/4 x 1 1/2 sections, while stock lasts, at 15 cents apiece f. o. b. Cincinnati, in lots of 10 cases or more.

C. H. W. Weber & Co., Cincinnati, Ohio.

Southern beekeepers, save money on comb foundation. Send me your beeswax to be worked, for cash or on shares. Terms the lowest, and satisfaction guaranteed. Send for terms. E. S. Robinson, Ft. Myers, Fla.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—200 dovetailed supers, Root make, for 10-frame hives, with section-holders, fence separators and springs all complete, for 4 1/4 x 4 1/4 x 4 1/4 sections, all in perfect order; have been little used; put together by a first-class mechanic, all joints put together with white-lead paint; painted one and two coats. Price, crated, f. o. b., Red Bank, N. J., 50 cts. each. No disease.

C. H. Root, Red Bank, N. J.

\$30,000 worth of Bee Supplies all boxed, ready to ship at once; 275,000 Hoffman frames, also Jumbo and Shallow frames of all kinds, 100 and 200 in a box. Biz stock of Sections, and fine polished Dovetailed Hives and Supers. I can give you big bargains. Send me a list of what you want. I can save you money. Will take beeswax in trade at highest market price. Charles Mondeng, 146 Newton Ave., N., Minneapolis, Minn.

You have likely been thinking for some time that you would like to have the Domestic Beekeeper come to you regularly each month, but have been putting it off for some reason or other. We should like very much to have you all start in with us this next year. We are very sure you will not regret it if you make this start. To some of the early December subscribers for 1918 we will send free the last three numbers of 1917. If you expect to get in on this back-number proposition you will need to be prompt in ordering, as those back numbers are going fast and there will be none when the present supply is exhausted. Address with remittance The Domestic Beekeeper, Northstar, Michigan.

WANTS AND EXCHANGES

WANTED.—Bees on shares; extracting outfit. M. Knudsen, Albert Lea, Minn.

WANTED.—To buy a good Barnes foot-power cut and rip saw. J. H. Reed, Grenola, Kan.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares. Superior Honey Co., Ogden, Utah.

BEES WANTED.—From 1 to 200 colonies, within 200 miles. Also second-hand apiary equipment. John E. Geiger, Syracuse, Kansas.

WANTED.—1 to 100 strong colonies of Italian bees in 10-frame dovetail hives. Bernard Benzinger, Beckman Terrace, Summit, N. J.

WANTED.—Bees in eight or ten frame hives, free from disease. Particulars. J. F. Garretson, Bound Brook, N. Y.

WANTED.—Second-hand extractor, Root's Automatic rev., 6-frame, 12-inch pockets, with proper pulley. Also 200 colonies of bees in eastern New York. J. B. Merwin, Prattsville, N. Y.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

It will be the same to us whether you remit for the Domestic Beekeeper direct to Northstar, Michigan, or whether you send it with your subscription to Gleanings in Bee Culture; but be sure to include it as we want every Gleanings in Bee Culture subscriber to become a Domestic Beekeeper subscriber.

AUTOMOBILE REPAIRS

AUTOMOBILE owners should subscribe for the **AUTOMOBILE DEALER AND REPAIRER**; 150-page illustrated monthly devoted exclusively to the care and repair of the car. The only magazine in the world devoted to the practical side of motoring. The "Trouble Department" contains five pages of numbered questions each month from car owners and repairmen which are answered by experts on gasoline-engine repairs. \$1 per year. 15 cents per copy. Canadian subscriptions \$1.50. Postals not answered. Charles D. Sherman, 107 Highland Court, Hartford, Conn.

GOATS

A fine milch goat for sale, or exchange for a foundation mill.

A. M. Applegate, Reynoldsville, Pa.

REAL ESTATE

A small California farm earns more money with less work. Raise the crops you know about—alfalfa, wheat, barley, etc.—also oranges, grapes, olives, and figs. Ideal for dairying, pigs, and chickens. No cold weather; rich soil; low prices; easy terms; good roads; schools and churches. Enjoy life here. New comers welcome. Write for our San Joaquin Valley, also Dairying and Poultry Raising illustrated folders free. C. L. Seagraves Ind. Com. A. T. & S. F. Ry., 1927 Railway Exchange, Chicago.

SOUTHERN FARMS ARE PROFITABLE. Get our illustrated lists of good farms in Virginia, N. Carolina, W. Va., Md., and Ohio at \$15 per acre and up. Excellent little farms in colony of Little Planters, Shenandoah Valley, at \$250 and up complete, on easy terms. Fine climate, good markets; best general farming, fruit, poultry, trucking, and livestock country on earth. Write for full information now. F. H. LeBaume, Agr. Agt. N. & W. Ry., 246 N. & W. Bldg., Roanoke, Va.

Do you want a farm where largest profits are made? The South's great variety of crops and wonderfully productive climate make it the most profitable farm section of America. It is the place for the lowest-cost meat production and dairy farming. It grows the largest variety of forage crops. Good lands, in good localities, as low as \$15 to \$25 an acre. Let us show you locations that will give the highest profits. M. V. Richards, Commissioner, Room 27, Southern Railway System, Washington, D. C.

BEEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith 1159 DeWolfe St., Vincennes, Ind.

When it's **GOLDEN** it's **PHELPS**. Try one and you will be convinced. C. W. Phelps & Son.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Cortlandt St., New York.

FOR SALE.—Bees, queens, and honey in their season. H. G. Quirin, Bellevue, O.

"She-suits-me" bright Italian queens; \$1 by return mail till Oct. 1. Allen Latham, Norwichtown, Ct.

Try **ALEXANDER'S** Italian queens for results. Untested, each, 75 cts.; 6 for \$4.25; \$8 per dozen. Bees by the pound. C. F. Alexander, Campbell, Cal.

When it's **GOLDEN** it's **PHELPS**. Try one and be convinced. C. W. Phelps & Son, Binghamton, N. Y.

Hardy northern-bred 3-banded Italian queens. June 1, untested, \$1.00 each; \$9.00 per doz. A. E. Crandall & Son, Berlin, Conn.

Vigorous prolific Italian queens, \$1, 6, \$5, June 1. My circular gives best methods of introducing. A. V. Small, 2302 Agency Road, St. Joseph, Mo.

Tested leather-colored queens, \$2.00; after June 1, \$1.50; untested, \$1.00; \$10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

Italian queens, **THE HONEY GATHERERS**. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

We have several hundred pounds of bees and 3-banded Italian queens for sale, April 1st delivery; safe arrival guaranteed. Write for prices. J. A. Jones & Son, Hope Hull, Montgomery Co., Ala.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00. J. B. Brockwell, Barnetts, Va.

FOR SALE.—I have about 300 colonies of bees in 10-frame bodies, each provided with one deep super or two shallow ones at \$4.75. Extractor, honey-tanks, and other extras will be sold cheap with bees. Edward Geesa, Old Town, Fla.

My bright Italian queens will be ready to ship April 1 at \$1.25 each; virgin queens, 50 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Pound package and queens for sale.—Booking orders for spring and summer delivery. My famous Italians will please you. 1-lb. pkg., 2-lb. pkg., and 3-lb. pkg. Book and get prompt service. H. B. Murray, Liberty, N. C.

Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolans. Tested, \$1.00 each; untested, 75 cts. each. Bees per lb., \$1.50; nuclei, per frame, \$1.50. Send your order for bees early. C. B. Bankston & Co., Buffalo, Leon Co., Tex.

ITALIAN QUEENS, northern-bred, three-banded, highest grade; select untested guaranteed; queen and drone mothers are chosen from colonies noted for honey-production, hardiness, prolificness, gentleness, and perfect markings. Price, one, \$1.00; 12, \$9.00; 50, \$70.00. Send for circular. J. H. Haughey, Berrien Springs, Michigan.

HELP WANTED

WANTED.—Experienced beemen for season of 1918. J. W. George Bee Co., Holtville, Cal.

WANTED.—Experienced bee-man for next season. State terms. R. S. Beckett, Rifle, Colorado.

Situation wanted for 1918.—I understand queen-breeding thoroly, and the combless-package business also. If you want a first-class all-around beeman I can fill the place. M. G. Ward, Duncan, Ariz.

WANTED.—Young man to assist in caring for 700 colonies and some poultry. State age, wages, and experience in first letter.

E. L. Lane, Trumansburg, N. Y.

EXPERIENCED BEEMAN wanted to work mountain apiary on percentage. Fine hunting and climate. References given and required.

C. F. Alexander, Campbell, Cal.

WANTED.—For the honey season of 1918, two students of good clean habits, willing and able to work. Board given, and more if conditions are favorable

R. F. Holtermann, Brantford, Ontario, Canada.

WANTED.—Wide-awake beeman, above draft for 1918. Must be experienced in every phase of the bee business; must be handy with tools, as I make my hives. Have outyard, and run mostly for extracted.

J. W. Potts, Gunnison, Miss.

HELP WANTED.—A good reliable man to work on a small farm and help take care of 400 swarms of bees. Would lease the complete outfit to responsible party. Good locations for all the bees. Address S. E. Stewart, Newcastle, Colo.

WANTED.—Young men of energy and character, of clean habits, not eligible for military duty, as helpers in our extensive bee-business. Fine chance to learn. Write immediately, giving wages, age, height, weight, experience, and references all in first letter, or expect no answer.

E. F. Atwater, Meridian, Idaho.

WANTED.—Industrious young man, fast worker, as a student helper in our large bee business for 1918 season. Truck used for out-yards and hauling. Apiaries located near summer resorts. Will give results of long experience and board and small wages. Give age, weight, experience, and wages in first letter.

W. A. Latschaw Co., Clarion, Mich.

TRADE NOTES

We have for sale from Los Angeles, California, office the following used foundation machines which we offer at bargain prices.

One 12 x 2½-in. medium brood mill in excellent condition, nearly new; has had a small tack run thru which spoils the looks of foundation for sale, but is no detriment in actual use. We offer this for \$25.00.

One 10 x 2½-in. light brood mill in fair condition. Will still make good foundation. Price \$20.00.

One 6 x 2½-in. thin super mill in fair condition. Will sell for \$10.00.

One 6 x 2½-in. extra thin super mill in fair condition. Price \$10.00.

The A. I. Root Co., 948 East Second St., Los Angeles, Calif.

STRAWBERRY PLANTS AND OTHER SMALL FRUIT

Of best fruiting qualities; large healthy plants grown by small fruit SPECIALISTS, at prices you can afford to buy, in large quantities. Everything guaranteed first-class. Grapes, Asparagus, etc. We can fill any size order. Catalog free.

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ITS FREE Several New Features. WRITE TODAY

Based on our experience as the oldest mail order seed concern and largest growers of Asters and other seeds in America. 500 acres and 12 greenhouses in best seed growing section. Our Guide is full of helpful information about planting, etc.—an invaluable aid to a successful garden. Illustrates and describes leading Vegetables, Flowers, Farm Seeds, Plants and Fruits. With our Guide, the best we have issued, we will gladly include interesting booklet, "A Liberty Garden."

Both are absolutely free.

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Does *all* that any other spray will do —but no other spray will do *all* that "SCALECIDE" will do. Kills all kinds of scale—all forms of fungus and insects that can be reached in dormant season—and invigorates your trees—and costs no more. *Read our money-back proposition* before ordering anything else.

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"Best" Hand Lantern



A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. **THE BEST LIGHT CO.**

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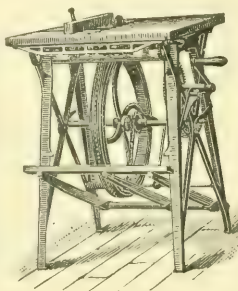
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This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

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BOOKS AND BULLETINS

"Wilderness Honey," by F. L. Pollock.

Reviewed by Morley Pettit.

Few apiarists, and scarcely any one outside the profession, would believe that so many really thrilling adventures could be experienced in beekeeping as Frank Lillie Pollock has crowded into one short summer of the heroes of this, his latest novel. They are all true to life, and, with variations, might happen to any young adventurer in this fascinating pursuit under similar conditions.

Left orphans and in poor circumstances a girl and her two young brothers purchased an apiary in the wilds of Haliburton, Ont., where they spent the summer in a log shanty. Their bees robbed and fought and stung, and gathered honey. In turn, they were robbed by a halfbreed squatter, and the young beekeepers' method of finding the stolen goods is one of the best features of the story. They placed three hives of bees near the squatter's shack during a time when no honey could be gathered from flowers, and the bees very soon discovered the stolen honey.

Wisely the author, who, by the way, is an experienced beekeeper, has not overdrawn the agreeable and profitable features of beekeeping, for the usual honey-flow which was expected from wild raspberry and basswood proved almost a failure, and his description of the unpleasant experiences of extracting with sticky honey and crawling bees is most realistic. A very fine point which only a beekeeper would appreciate occurs where the freshly extracted supers are left out of doors by the young beekeepers who were too tired to look after them. The beekeeping reader holds his breath over the excitement this would cause in an apiary until he learns that a heavy flow of honey from willow herb had begun early the next morning.

The story, which ran first as a serial in the Youth's Companion, and now published by the Century Co., of New York, was written especially for boys and girls, but will be found intensely interesting by any one who has kept bees, as well as both thrilling and instructive by those who have not had that experience.

The book is unique, and might be called epoch-making in the sense that it is, perhaps, the first complete novel based on adventures connected with beekeeping; and while the author has taken certain liberties with the behavior of the bees which he considered necessary for the development of his plot, it is much more nearly true to bee-nature than most books on bees which have been published for popular reading outside the recognized practical works on bee-management.

Have FRESH FRUIT for Your Table

Strawberries, blackberries, raspberries, currants, grapes will grow anywhere in any garden. Set out all the plants you can. If you have a surplus crop sell or preserve it. Storrs & Harrison small-fruit plants are vigorous growers and abundant bearers, raised by a concern that has given satisfaction for 64 years. No agents, everything sold direct to you, *delivery guaranteed and postage paid.*

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is a reliable guide to all that's good for the small or large fruit-gardener. Its 192 pages give information so plain that with it anyone can have a successful garden. Send today for a copy.

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LIVINGSTON'S FAMOUS Tomatoes



Gives satisfaction. Stand for highest yield and quality. We originated sorts for all purposes and all tomato growing sections. We grow more tomato seed than any seedsmen in the world.

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Livingston's Globe, finest pink, for slicing and shipping, pkt. 5c. Livingston's Stone, finest bright red, for canning and catsup, pkt. 5c. Both immense yielders. Try them.

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One of the finest seed catalogs published. Gives truthful descriptions and helpful cultural directions of the most reliable sorts of vegetable, flower and field seeds. Tells when to plant and how to grow big crops. Write for free copy.

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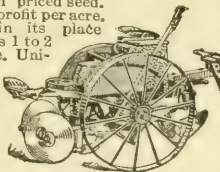
Answer the farmers' big questions, How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The

IRON AGE Potato Planter

solves the labor problem and makes the best use of high priced seed. Means \$5 to \$50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

No Misses
No Doubles

Bateman Mfg Co., Box 20B, Grenloch, N.J.



AROUND THE OFFICE

M.-A.-O.

I had every last sort o' good intention to turn over a new leaf New Year's Day, and get away to a new start about language. I did. But you all will see just how I couldn't under the circumstances, for you'll take notice right away how I just had to lug the old year over into the new one, finishin' up that trouble that started onto me all to once out in my old barn one night the last part of November. So I suppose here goes for another year just like all the others, no better and probably some worse—all on account of other folks' interferin' with me as an author.

Well, I got that durnation censor clamp unloosened from that article I began in December Gleanings and wasn't allowed to finish up. I told the Roots I had a whale of a good moral attached right onto the end of it, and they said if that was so I could finish it this January number. So I am going to.

You readers will remember it was about something that happened to me in my barn where I had stored potatoes in the old horse stall with no siding on it and gone fishin' with my neighbor Lutz when praps I ought to have got those potatoes all the way to the cellar and been prepared for the cold snap that came up so awful sudden. I told you how I outmaneuvered my wife by staying over at the office till dark and got by her and into the cellar on the way to the barn a-sailin', and nothing very cheerful for me goin' on anywhere. As I was saying, I was just wishin for the company and comfortin' assistance of my neighbor, Ab Lutz, to help sort and carry those potatoes into the cellar. He was more to blame for my leavin' off work and goin' fishin' the afternoon before than any one else was. About half of all this summer he's been tantlingly waving a fish-pole over my backyard fence—if the Mrs.

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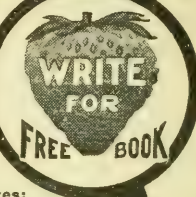
and learn how to grow two big crops of strawberries each year. This book was written by the world's leading strawberry expert who has made a fortune growing strawberries. It tells you how to make one acre do the work of two, and makes strawberry growing so easy and simple that beginners make

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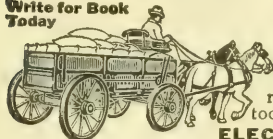


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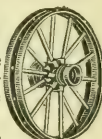
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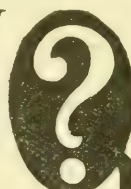
IRON AGE Barrel Sprayer



Barrel Sprayer

(horizontal) solves the spraying problem for the busy farmer. Can be used in any wagon, cart or sled. Reliable easy-working pump placed outside the barrel—prevents rusting—all parts easy to reach, 100 to 125 pounds pressure with two nozzles. 50 and 100 gallon sizes. We make a full line of sprayers. Write today for our free booklet.

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Buy direct from my factories, where I build a powerful, economical, reliable, perfectly designed Galloway Masterpiece Engine from the highest quality materials and sell to you at lowest manufacturers' price. Tens of thousands in satisfactory use. All sizes from 1 1/2 to 16 h.p. portable, stationary, saw rigs, pumping outfits. They operate on

GASOLINE OR KEROSENE

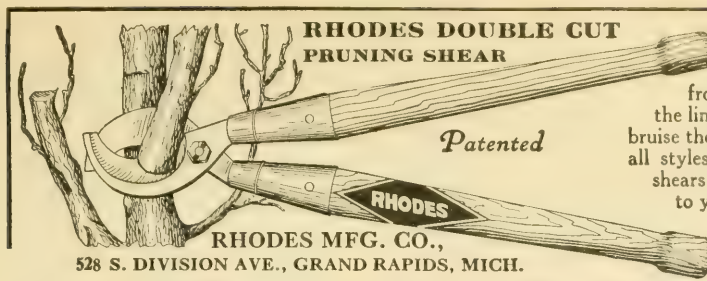
Also build manure spreaders, cream separators, 300,000 satisfied customers, some near you. Close shipping points save freight. My free catalog describes Galloway tractors. Get it before buying. **WM. GALLOWAY CO., Box 766 Waterloo, Iowa**



Around the Office—Continued

didn't happen to be mixed up in our back-door landscape somewhere. The fishin' industry would die out completely for all of her. Ab 'most always succeeded in overtempting me that a way, too. But he never comes around brandishing a hoe. Not Ab. And he didn't come this time. So I got out to the old barn alone except for my own surging thoughts, and began on those potatoes. I got the first two bushels sorted by hand-feeling, and then looked around for the wheelbarrow to wheel them up to the house. But you don't find a wheelbarrow after night that you left off using in a hurry just before going fishin' the day before. I never have, and I didn't this time. So I humped myself to it and carried those two bushels and sixteen other just as heavy bushels of night-sorted potatoes into that dark old cellar of mine and dumped them into the potato-bin there. I had got to the very last bushel of potatoes, most of which had rolled away up under the feed-trough in the old horse-stall, and it was back-crackin' and soul-wrackin' work to get the lifeline to 'em. I was talking more or less to 'em continuously about why they had to roll away up under that feed-trough, anyway. But I finally got the last one aboard the basket, and was trying to straighten straight up in the gloom of the stall and see if my backbone would ever come together again and the pieces work together as a reunited and happy family of spinal vertebree, when—great gee-whillikens, Jehu, John-Henry, dad-bust it, dinghing it (rest all censored). * * *

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CHINA
CEMENT
STANDS HOT AND COLD WATER



RHODES DOUBLE CUT PRUNING SHEAR

Patented

RHODES MFG. CO.,
528 S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door.

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Queens Bees by the Pound Queens

Three-banded and Golden Italians. The best of either. They are hustlers—gentle to handle, cap their honey white, are very resistant to European foul brood. We have added B. M. Caraway's queen-rearing outfit to ours; also have with us one of his assistants, so we hope to fill all orders promptly. We had fine success last season shipping bees by the pound in our newly devised shipping-cage, a number of shipments going as far as Idaho and Wyoming. Mr. R. B. Millis, Corinth, N. Y., wrote, "Bees arrived in fine shape; not 50 dead bees to the cage." 2-lb. size. Satisfaction and safe arrival guaranteed. Reference: The Guaranty State Bank, Robstown, Texas, or The City Nat. Bank, Corpus Christi, Texas.

	1	6	12	50	100
Untested Queens	\$1.15	\$ 6.35	\$11.50	\$ 43.70	\$ 85.00
Select Tested	2.50	11.50	20.70	74.75	138.00
Bees, 1-lb. package.....	1.75	9.80	18.40	74.75	138.00
Bees, 2-lb. package.....	2.90	17.25	33.95	132.25	240.00

When ordering pound packages add price of queen wanted.
Get our prices on empty bee-cages. *Circular Free.*

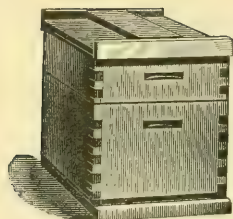
NUECES VALLEY APIARIES, Calallen, Texas, hereafter will be known as Nueces County Apiaries, Calallen, Texas

E. B. AULT, Proprietor

Around the Office—Continued

What it was? Yes, and what was it also? Furthermore, what could it have been, too? Where was my right eye? Also my right occipital bone and upper right clavicular cheek bone? Had they suddenly left for good? Were they on the stall floor or out in the cold night on the ground? Was there more of me left or was the most of me knocked off? Had the old barn fallen on me, or had I knocked the old barn off its foundation unintentionally with my right eye and right side of my face? Which? It was too dark for my left eye to gather any general information on the subject, even if the newly discovered stars and constellations hoverin' around just then had not been so everlastingly dazzlin' and attractive. But as general pain feelin's and comeback from shock set in, things got more normal, and some part of me finally located the hand'e of my old lawn-mower cussedly and firmly sticking downward about eye-high in the exact latitude and longitude where I had just been trying to straighten up and reconstruct my late backbone. That must of been it. It was so voted by me. I had put the lawn-mower up in there instead of in the tool-house about the time the last rose of summer was left bloomin' alone. You can usually put a lawn-mower up for winter in any old

place where it will stick in, a good deal easier than you can put it where it belongs. It saves labor also. It may, moreover, wear out a good deal quicker and you can then tell your wife you ain't got any more money to buy lawn-mowers with and you will just have to get along without one for a few seasons or until you get a whale of a honey crop. But I didn't admit that lawn-mower handle's right to dismantle the right side of my face, even if I had put it up there as perhaps I oughter. It was no time for it to do it in the dark, anyway, secret and just after I had been sorting and carrying away eighteen bushels of potatoes to save them from freezing. Not by a jugful. I was madder than my fishin' neighbor, Ab Lutz, was onct when his old cow swished her tail across his face when he was milking her in his barnyard. He bit right in to her tail with all his teeth, he did, and when as resulting from the bite she started right out prompt to see and visit all the adjoinin' country he hung right on, keeping his teeth-and-tail holt till she brushed him off down among the trees in the woods. That's just about how mad I was. So I had got along to about the 17th language stanza and the 331st crack at that ding-binged, son-of-a-sea-cook of a lawn-mower handle with a three-by-four scantlin' that I clawed and gnawed



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31 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality.

Write for our illustrated catalog and discounts today.

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SAVE ON SUGAR AND HELP WIN THE WAR

This will increase the now heavy demand for honey.

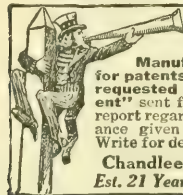
It will mean money in your pocket to get a good stock of KRETCHMER supplies now before prices advance further, and work your bees to the limit next season. Freight conditions may be bad in the near future and cause delays. Fix up your order tonight, you may forget it if you wait.

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All hardy stock—twice transplanted—root pruned. Protect buildings, stock, crops. Hill's Evergreen Book, illustrated in colors, free. Write today. D. Hill Nursery Co., Box 2463 Dundee, Ill. Evergreen Specialists



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Around the Office—Continued

off the side of the stall for the purpose, when the whole ding-busted lawn-mower, handle and all, hopped out of the old feed-trough, and, after tipping over the basket of potatoes on the floor, ricocheted off on to my right foot. I don't know why that made me think of my wife—but it did. What it made me think especially of was how all that evening, every time she would hear me emptying another basket of potatoes into the old bin down in that dark old cellar of mine she would strike up singing, "Work while the day grows brighter," etc.; and if I had got away back even to the barn before she had got to the last line about "Work for the night is coming when man's work is done," she would come to the back door and whoop up that last line till they could hear her over into the next county. It was a perfectly good Sunday-evening prayer-meeting song, but it just struck me all in a heap right there and then that she hadn't been singing it that way. I say I thought of this point very strongly just as the ding-binged old lawn-mower knocked over the potatoes and then pounced on my right foot. So I started for the house, with only one foot and only one-half of my face working. But when I got there I was able to begin telling her right away. Most of it was about her singing and her everlasting foolishness about always having to have potatoes for the family. I didn't let her get in a word edgewise—and she was expecting to do most of the talking, too, when we met next. She thought she had all the argument on her side. But a man ain't the same man toward a wife when a 65-pound lawn-mower has just dropped five feet onto his right foot, and when he has got a lawn-mower handle stuck thru the only right eye he'll ever have, and all this just as a result of harvestin' potatoes after dark for her family. No, he ain't the same. He ain't ever the same for several hours—and I ain't even now, eighteen hours later. I don't know when I ever will be again. I ain't cowerin' around home now any more nor making any excuses about all the times I went fishin' last summer or about putting off the potatoes till so late. I told her to her face, square in her eye, that I wished to heckalorum those potatoes weren't dug yet and that I was glad the ding-binged old lawn-mower was busted, and if she wanted that last bushel of spilled potatoes she could just go and pick 'em up

Full Values in "falcon" Beekeepers' Supplies

For the last forty years during our manufacture of "FALCON" supplies it has been our endeavor to place upon the market the very best possible line of supplies. And we pride ourselves in having accomplished this. "FALCON" supplies have not only been recognized as the best in this country, but also a leader in other countries. Nothing expresses the superiority of the "FALCON" ware better than the many kind and pleasing words we receive from our satisfied customers, and the ever-increasing demand for "FALCON" supplies.

The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters throught the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid

Dealers Everywhere

"Simplified Beekeeping," postpaid

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where the good beehives come from.

ORDER NOW

A big year is before the beekeeper. There will be a rush for supplies the last thing. Don't get caught short.

RIGHT PRICES . . . GOOD SERVICE

If you order of

A. M. MOORE, ZANESVILLE, OHIO



Established 1885

It will pay you to get our 50-page catalog and order early.

Beekeepers' Supplies

The Kind That Bees Need.

The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Bees-wax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

Around the Office—Continued

herself or go to Timbucktoo just as she pleased.

That's why I say just what happened to me out in my old barn last night I wish had a-happened to the whole shebang of these Roots and all these other goody people that are choking me off from natural expression and so paralyzing a good many of my profoundest thinks. I'd have just liked to have been there secret and seen if they would have said: "Oh, dear me! How painful it is! I must go right into wifey and tell her how it all happened!"

[A week later.—I am awful sorry I wrote the above now. I wish it hadn't a-been printed. I would unprint it now if I could. I see I was unreasonable about the potatoes and the lawn-mower, and thirdly about my wife. I apologize to the potatoes and the lawn-mower. Things also are getting normal at the house again and I have taken back my old commission as second lieutenant in the Home Co., N. G. A fellow's awful foolish to get mad that way. I made just about such a enormous fool of myself as my neighbor Harvey Beach did with his pigs last spring when the sleet and ice storm was on. It got 'most all-fired slippery that time. Ice everywhere. Harvey had put off carrying the swill out to his pigs for two days, telling it was dangerous it was so icy. He is naturally of a sort of waiting and shy disposition about advancing too tumultuously on any form of labor. But when both his swill-pails got swimming full he just had to go, ice or no ice. He was balancing along, one foot then another, and got all safe 'most up to the hog-pen when those dozen or more half-choked hogs came squealing and grunting out to the outside trough. Harvey says they rattled him. Any way, he changed

When Ordering Supplies

remember we carry a full stock and sell at the lowest catalog price. Two lines of railroad—Maine Central and Grand Trunk.
Prompt service and no trucking bills.

THE A. I. ROOT CO., Mechanic Falls, Maine.
J. B. MASON, Manager.

Beeswax Wanted

In big and small shipments, to keep Buck's Weed-process foundation factory going. We have greatly increased the capacity of our plant for 1918. We are paying higher prices than ever for wax. . We work wax for cash or on shares.

Root's Bee-supplies

Big stock, wholesale and retail. . . Big catalog free.

Carl F. Buck

The Comb-foundation Specialist

Augusta, Kansas

Established 1899

Eastern Beekeepers.

You will need supplies for the coming season and you had better prepare early. Freight is very slow and at the high price of honey you must surely be prepared. Send us a list of what you want in the bee line.

Catalog free.

I. J. Stringham, 105 Park Pl., N. Y.

Apiaries: Glen Cove, L. I.

Around the Office—Continued

ends all of a sudden, feet up, and what swill didn't go all over him went on the ground. He managed to get on to his feet after sprawling around about five minutes more or less, madder'n a wet hen, and the first thing he did when he was fairly riz was to use some perfectly awful language to them pigs. He told them they were nothing but gol-durned hogs any way and never would be anything else, that they had always been too ding-danged hoggish for anything, anyway, and were yet. Then he let fly at them with both the swill-pails just as hard as ever he could. That upset him again harder than the first time. It sort of shook him so that he had to crawl over to the fence and pull himself up by the rails. He ain't a young man—only in temper. He rested a minute, but kept talking awful strong to the pigs. He then grabbed the top rail off the fence and started after those hogs hillycalarrup. He fell down and clawed around on the ice a dozen times till he hadn't any breath left to talk with—and never got within ten rods of a pig, either. He got back to where his swill-pails were and then he jumped on both of them till he had smashed them all to pieces. He said he'd teach 'em to trip him up. He then went into the house—or crawled there, black and blue pretty much all over—and everlastingly gave it to the poor women folks for being such everlasting ding-dinged fools as to save up swill at all for the pigs when a sleet storm was on. He then had to go to bed and couldn't get up for a week—just so sore and lame he was. So I say it don't pay to get red-white-and-purple mad and make a everlasting fool of yourself. Not by a durnd sight it don't.]

Special Notices by A. I. Root

A "GRISTMILL," FOR HOME GRINDING

One of our readers criticises the little mill that we mentioned some time ago for grinding wheat in the home, and referred me to what is called the Blackhawk gristmill made by A. H. Patch, Clarks-ville, Tenn. This mill is a good deal like a coffee-mill, but on a considerably larger scale. It has a crank a foot long, which gives plenty of power to grind corn, even if it is very hard and dry, and some of the flint varieties. We find this mill does excellent work for both wheat and corn. You can grind fine or coarse as you choose. But if you wish to make any speed in your grinding it takes considerable muscle. A strong girl or boy would probably keep it going right along; but if I had to do the grinding for a family of any size I think I should want to hitch on electricity or some kind of power. The mill costs \$3.00, and will be delivered here in Ohio for \$3.50.

There is one thing I like about such a mill, especially for grinding new corn. As Indian meal does not keep very well it is better to grind it a little at a time. The corn meal on the market has the chit (perhaps the most nutritious part) removed just because it is so liable to mold when ground, chit and all. I think you will find your home-made meal, when ground only as you need it, is quite a little ahead of the corn meal you buy at the grocery; and I hardly need tell you there is a tremendous saving in making the shortest possible cut between producer and consumer, or, in fact, letting the producer and consumer be one and the same person as far as possible.

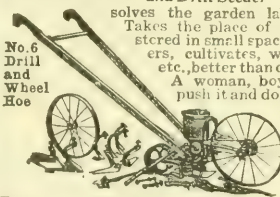
IRON AGE

GARDEN TOOLS

Answer the farmer's big questions: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

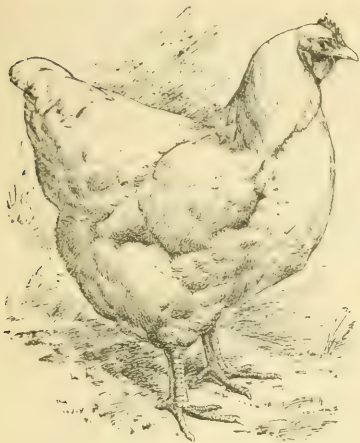
IRON AGE Combined Hill and Drill Seeder

solves the garden labor problem. Takes the place of many tools—stretcher in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in 60 minutes. 50 combinations. \$4.50 to \$10.00. Write for booklet.



Bateman Mfg Co., Box 200, Grenloch, N. J.

The Truth about Poultry



Get the Facts by Reading

The One-man Poultry Plant

The Book that Gives

Successful Methods of Men on Farms of Small Acreage. Complete in Twelve Parts, Printed in One Volume.

By Dr. N. W. SANBORN

Real work, with real poultry, on a real New England farm. This is a simple story of what has been done by a man, at forty-five years of age, town bred and city educated, getting out of practice of medicine, buying a small farm in the hill country, and making a success of the venture. Not only is the rearing of chicks and the management of adult fowl completely covered, but the interesting side issues of fruit growing, grain raising and the production of milk, that cannot be escaped on a real farm. You get rugged facts—rarely found in print. The truth about poultry as found in actual life on a one-man poultry farm.

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The One-man Poultry Plant, in twelve parts (book form), and the American Poultry Advocate, one year, for only 50 cts.; book and Advocate, three years for only \$1.00, if order is sent at once.

Our paper is handsomely illustrated, practical, progressive and up-to-date on poultry matters. Established 1892. 50 cents a year. 3 months' trial 10 cents. Sample copy free. Catalog of poultry literature free.

AMERICAN POULTRY ADVOCATE
631 Hodgkins Block, Syracuse, N. Y.

A PROFITABLE Sideline Occupation

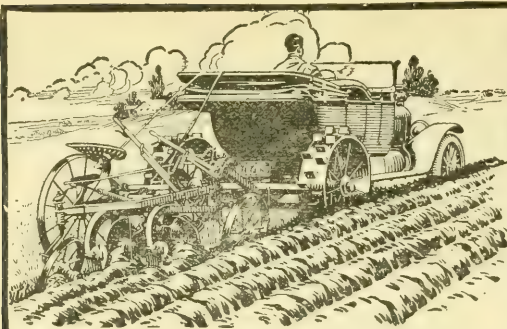
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Quick action is necessary to help provide for the shortage in meat. A pound of meat can be produced cheaper with Rabbits than in any other way, because you can use the cheapest food known in raising them, vegetables, dandelions, grass, hay, etc. To do this is not only an act of patriotism, but a means of reducing the high cost of living as well.

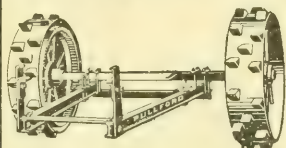
Tells all you want to know about Rabbits. Our Book: "The Rabbit; How to Select, Breed and Manage the Rabbit and Belgian Hare for Pleasure or Profit," by breeders of long experience with rabbits. Seventh edition, nicely illustrated, enlarged and much improved. Price 25 cents, with sample copy of the American Poultry Advocate containing Belgian Hare Department, which tells you where to buy Belgian Hares, Flemish Giants, Siberian Hares, New Zealand and all varieties of Fancy Rabbits.

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With **FORD** All That 4
Your **Horses Can**
Pullford \$155 F. O. B.
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MAKES a practical tractor out of a Ford or most any other car. Easily attached to or removed from the car in thirty minutes. No holes to drill, no springs to remove. **Practical, Durable, Reliable.**



New FAN DEVICE Prevents Heating

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Pulls plows, harrows, drills, mowers, binders, hay loaders, road graders, wagons, trucks, etc. Steel wheels with roller bearings and tires 10 inches wide, two pairs of hardened Vanadium steel pinions, one for plowing and one for hauling speed. A tractor with the reliability and durability of the Ford car. Prompt shipment. Write for catalog.

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The greatest forage plant that grows. Superior to all as a fertilizer. Equal to Alfalfa for hay. Excels for pasture. Builds up worn-out soil quickly and produces immense crops, worth from \$50 to \$125 per acre. Easy to start, grows everywhere, on all soils. Don't delay writing for our Big 116-page free catalog and circular giving full particulars. We can save you money on best tested, guaranteed, scarified seed. Sample Free. Write today. **A. A. BERRY SEED CO., Box 966, CLARINDA, IOWA**

Potted Winter Blooming Bulbs



We guarantee them to reach you safely, even in coldest of weather and to blossom satisfactorily this winter in your home. Potted in rich earth and fertilizer. They are rooted and ready to make instant growth. Your choice of Narcissus, Hyacinths, Tulips and Crocus, 2 pots for 25 cts, 10 pots for \$1.00 Postpaid.

Our Nurseries and Seed Farms were established here in Northern Iowa over a half century ago and our "Blizzard Belt" strains of Fruits, Ornamentals, Everbearing Strawberries, Garden Seeds, etc., are being grown successfully in every state in the Union. Catalogue of our various "Blizzard Belt" products and a copy of our paper Gardner's Garden Experience, Free. **The Gardner Nursery Co., Box 59, Osage, Iowa**

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Be sure your bees have enough for winter. If they are short we have just the thing you want, candy in large paper plates weighing about two pounds each, enough to last three to four weeks, two will go nicely on a hive. Write for prices also catalog of supplies.

H. H. JEPSON, 182 Friend St., Boston, Mass

PATENTS

Practice in Patent Office and Courts
Patent Counsel of The A. I. Root Co.

Chas. J. Williamson, McLachlan Building,
WASHINGTON, D. C.

Correction.

In the report of the proceedings of the convention of the Western New York Honey Producers' Association held at Buffalo on Nov. 13 and 14, GLEANINGS stated that Wm. F. Vollmer was re-elected secretary-treasurer. We were in error. Howard Myers of Youngstown, N. Y., is the new secretary-treasurer of this very-much-alive association.

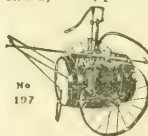
IRON AGE

Farm, Garden and Orchard Tools

Answer the farmer's big questions: How can I grow crops with least expense? How can I produce fancy fruit with the least time, labor and cost? The

IRON AGE Barrel Sprayer

solves the spraying problem for the small orchard, farm, public park, poultry yard and houses, etc. Easily pushed wherever wanted and operated by man or boy. The only pump built of its type, easily taken apart and made with renewable valves. We make a full line of orchard and field sprayers. Write today for booklets—free.



Bateman Mfg Co., Box 20F Grenloch, N.J.

Beekeepers, We are Ready!

We are ready for the biggest year in the history of beekeeping—ready to serve the beekeepers of America more promptly than ever, and with equally as good goods as ever. We have anticipated the beekeepers' wants for the big coming year of 1918. The high price for honey, and the prosperity of most beekeepers in 1917, led us to begin filling our big warehouses with beekeepers' necessities last fall. That's why we are ready now.

Don't Delay

You beekeepers have never before had the promise of so prosperous a year as the one that lies before you. Not only the high price of honey but a patriotic duty urges you to produce every pound of honey possible in 1918. To this end you should make sure of your supplies NOW. Freights are slow, and may be slower by next spring. The freight congestion of the past season may be repeated in even worse degree. DON'T be one of those beekeepers whose bees will have to wait on delayed shipments.

Do This Today

Send us today a list of your needs, and ask for our new beekeepers' supply catalog. We are ready to make a close estimate, especially on the earliest orders. Don't wait—don't delay. Do it today.

Remember that we absolutely guarantee our goods to be manufactured perfectly of best material. As always, if in any instance our goods are not found to be exactly as represented by us, money will be refunded and all transportation cost paid by us.

Order standard goods, if possible, and serve your own convenience by ordering either from us direct or from the nearest Root service branch or agency.

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Philadelphia, 8-10 Vine Street
Chicago, 215 W. Ohio Street
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San Francisco, 245 Mission Street

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Syracuse, 1631 W. Genesee Street
Indianapolis, 873 Mass. Avenue
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The A. I. Root Company
Medina, Ohio

Anticipate Your 1918 Bee Requirements Now

Help Us Co-operate with the Gov-
ernment by Ordering Your Bee
Supplies for Next Season Now. . .

Transportation conditions may not permit of prompt shipment later on--Now, of all times, the beekeeper "SHOULD NOT PUT OFF UNTIL TOMORROW WHAT HE CAN DO TODAY." You owe it to your country and to yourself to prepare at once for the gathering of the 1918 crop.

Have You Enough Hives?
Have You Enough Supers?
Have You Enough Frames?
Have You Enough Sections?

And have you enough of the rest of the things you will need?

The Lewis Factory is now operating night and day to take care of the season's demands. Help us while we are helping you--Place your orders now so manufacturers and dealers can help their country, your country, you and themselves by preparing now for your needs.

The New Lewis Catalog will be out This Month.

G. B. Lewis Co. . . Mfrs. Beeware
Watertown, Wisconsin

Cleanings in Bee Culture



WINTER

So all night long the storm roared on;
The morning broke without a sun;

* * * * *

And, when the second morning shone,
We looked upon a world unknown,
On nothing we could call our own.
Around the glistening wonder bent
The blue walls of the firmament,
No cloud above, no earth below ---
A universe of sky and snow.

---Whittier

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you spot cash for anything you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.

633 Central Bldg., Sixth and Main Sts.

Los Angeles, California

Telephones: Home 10419; Main 5606

BETTER THAN TEN —MEN WITH HOES

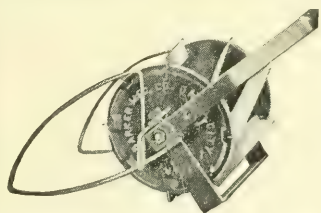
The **BARKER WEEDER, MULCHER and CULTIVATOR**, 3 garden tools in 1, cuts the weeds underground and breaks the hardest crust into a porous moisture-retaining mulch. "Best Weed Killer Ever Used."

The **BARKER** has eight steel blades which revolve against a stationary steel knife running just under the surface. The combined operation of blades and knife destroys the weeds and forms the necessary mulch—**INTENSIVE CULTIVATION**. A child can operate it. Makes gardening profitable and a pleasure.

The **BARKER** is adapted to all gardening, in any soil, and can be used throughout the season. Works right up to plants. Has leaf guards. Cuts runners. Does far better and much faster work than a hoe or wheel hoe. Has easily attached shovels for deeper cultivation. Strongly built. Pays for itself quickly in bigger, surer crops with less worry and work.

Illustrated Garden Book FREE.

tells about the marvelous machine. Sent postpaid on request. Write for it today.



BARKER with Leaf Guard Attached.



Thousands of BARKERS now in use—in market gardens, on farms and in cities and towns.

"Barker Mfg. Co., David City, Neb. Dear Sirs:—I have received the Weeder which you so kindly sent us for demonstration work. I have given it a try out and like it very much. It is the best of any that I have ever seen. I am very glad to have this on the Farm and will take pleasure in recommending it to any one who desires a weeder.—T. S. Parsons, Agronomist, University of Wyoming, Agricultural College and Experiment Station, Laramie, Wyo."

Scores of others have written us praising the **BARKER**.

Send Now for our free garden book and factory-to-user offer.

BARKER MFG. CO., Dept. 10, David City, Neb.

SUPERIOR FOUNDATION

"Best by Test"

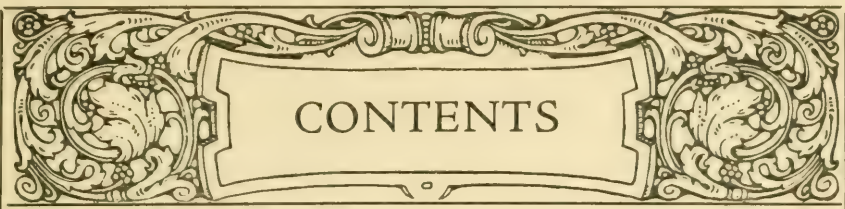
Present heavy orders demand utmost capacity production. Your foresight now will fortify you against delayed shipments and advanced foundation prices later in the season. . . Special prices on request.

Old Combs Rendered on Sharss

Get our terms for manufacturing your own beeswax into foundation.

Superior Honey Company, Ogden, Utah

(Manufacturers Weed Process Foundation)



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SUBSCRIPTION RATES.—One year, \$1.00; two years, \$1.75; three years, \$2.50; five years, \$4.00. Canadian subscription, 30 cents additional per year, and foreign subscription, 60 cents additional. **DISCONTINUANCES.**—On and after March 1, 1917, all subscriptions, not paid in advance, or specifically ordered by the subscriber to be continued, will be stopped on expiration. No subscriber will be run into debt by us for this journal. **CHANGE OF ADDRESS.**—Give your old address as well as the new and write the name that appears on the paper. **REMITTANCE.**—Should be sent by postoffice money order, bank draft, express money order or check. **CONTRIBUTIONS** to GLEANINGS columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. **ADVERTISING RATES.**—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. **ADVERTISERS' RELIABILITY.**—The publishers use utmost diligence to establish in advance the reliability of every advertiser using space in this journal. Entered as second-class mail matter at the Postoffice at Medina, Ohio. Published monthly.

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

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We offer you even better service
than ever before at our new loca-
tion.

Come in and see us.

Have you received
our new cata-
log?

Write for our
1918 Bee Catalog
now.

SUGGESTIONS

For the Wide-awake Beekeeper of Today

If you hired a carpenter to repair your barn, and he arrived without his tools, he could not give results even if he were the best carpenter in the country.

It goes without saying that you, a beekeeper, must look to the future or the honey season will be on and your needed supplies will be tied up in some freight car—**EMBARGOED.**

Order from us **NOW** allowing for slow freight deliveries and your supplies will reach you in plenty of time.

Old Comb

Ship your old comb and cappings to us for rendering. We charge you 5c per pound for the wax rendered and pay you the highest market price.

Wax and Honey

We always buy Comb and Extracted Honey as well as Beeswax, so when you have the above to offer, write us and you will be well pleased.

FOUR REASONS FOR OUR SUCCESS

**HONESTY
QUALITY**

Lewis' Beeware

If you have used LEWIS' BEEWARE, you know the quality, if not this is just the time to invest your money where the results are lasting.

"Made Like Furniture"

**PRICE
SERVICE**

**DADANT'S
FAMOUS
FOUNDATION**

**R O O T'S
SMOKERS and
EXTRACTORS**

The **Fred W. Muth Co.**

214 Walnut St., Cincinnati, Ohio

"Quality Counts With Us."

Early-order Discount

The early-order cash discount for February is one per cent. The number of producers who take advantage of special discounts for fall and winter orders is constantly increasing. Send us a list of your 1918 requirements, and we will furnish you with quotations. Root's Goods only. The quality is right. . . Beeswax wanted.

M. H. Hunt & Son, Lansing, Mich.
510 No. Cedar Street

BEE-SUPPLIES

Read Order Early

Owing to the congestion of freight and embargoes we caution all beekeepers to get their order in early, otherwise you will suffer a great loss when you actually need goods, and you perhaps will be unable to get them for the above reasons. We have a large stock on hand, and can fill orders promptly, provided the railroads will accept freight.

Send for Our New Catalog

C. H. W. Weber & Co., Cincinnati, O.

2146 Central Avenue

HONEY MARKETS

The New York market now sets the price of extracted honey in carlots. The British and American Governments have practically commandeered all shipping space; so it's impossible now for private concerns to ship more honey to Europe. Probably no more honey will go to the Allies until one of the European Governments makes a direct requisition for it. Whether the elimination of the European demand will depress the price of honey, no one knows. The supply in the United States is very low and the market high and firm. While there is immediate promise of sugar from Cuba there is a great lack of shipping for transporting it here.

New York has recently been paying anywhere from 17 to 21 cents, in carlots, delivered, for extracted honey. But there is a feeling in the East that honey may have reached the top because of the elimination of shipments of honey to Europe. The prospects of the California crop next season are not at present very bright. The long-hoped for rains have not yet come, altho it's not too late for them yet. The unprecedentedly severe winter in eastern United States holds danger for bees.

Taking all the factors into consideration, it's our opinion that the market will remain firm and high on both comb and extracted.

General Quotations from Wholesalers.

[These firms are asked to quote the wholesale prices they make to retailers. Accordingly, their prices must be figured at least one profit higher than the price paid the producer.]

CHICAGO.—Receipts during the past month have been light, but there has been a steady demand. The market at this time is practically bare of honey. Especially is this true of comb. The best grades of comb honey have now reached the selling price of 23 to 25c per lb., with all off grades selling at 20c and above. Extracted white sells at 17 to 18c per lb., according to kind and quality; ambers from 15 to 16c per lb. Beeswax, 35 to 37c per lb. All of which will find a ready market.

Chicago, Ill., Jan. 18. R. A. Burnett & Co.

ST. LOUIS.—Our honey market is firm both on comb and extracted, and the stock in wholesalers' hands is pretty well exhausted. No comb or extracted honey has been offered in this market in any quantities. The following quotations are merely nominal and subject to stock: Comb honey, extra fancy (per case) \$6.00; fancy (per case) \$5.50; No. 1 (per case) \$4.50; No. 2 (per case) \$4.00. Extracted honey, light amber, in cans, 18-19c; amber, in cans, 17-18c. Clean, average yellow beeswax, per lb., 40c.

S. Hartman Produce Co.

St. Louis, Mo., Jan. 17.

KANSAS CITY.—Market practically bare of comb honey except small amount in wholesalers' hands. Jobbers are out. Moderate amount of extracted honey. Extracted honey, white (per lb.) 18c; light amber, in cans, 17c; amber, 15-16c. Clean, average yellow beeswax, per lb., 35-40c.

C. C. Clemens Produce Co.

Kansas City, Mo., Jan. 17.

BUFFALO.—There is practically no comb or extracted honey being offered in this market. Market is practically bare. Demand good and both comb and extracted honey could be sold readily at quoted prices. Comb honey, fancy, 24-25c; No. 1, dark, 21-23c. Extracted honey, white, per lb., 17-18c; light amber, in cans, 15-16c.

Buffalo, N. Y., Jan. 17. Gleason & Lansing.

PORTLAND.—No comb honey being offered and very little extracted. Sale restricted on account of high prices. Comb honey, extra fancy (per case) \$4.75; fancy, \$4.50; No. 1, \$4.25. Extracted honey, white (per lb.) 18c; light amber, in cans, 17c; amber, 16c.

Portland, Ore., Jan. 17.

Pacific Honey Co.

SYRACUSE.—Practically no honey being offered at present, comb or extracted. Our market is not bare of honey, neither is there a large demand at present. Comb honey, extra fancy (per case) \$5.04; fancy, \$4.80; No. 1, \$4.60. Extracted honey, white (per lb.) 18c; light amber, in cans, 17c.

Syracuse, N. Y., Jan. 19.

E. B. Ross.

CLEVELAND.—Our market is almost bare of comb honey. None being offered and stock in hands of both jobbers and retailers is very limited. Comb honey, fancy, per case, \$5.50; No. 1, \$5.00.

Cleveland, O., Jan. 18.

C. Chandler's Sons.

PHILADELPHIA.—Only a fair inquiry for honey at the high prices. Light receipts of comb honey and no extracted offered. Market well cleaned up. Comb honey, fancy, per lb., 25-26c; No. 1, 22-23c. Philadelphia, Jan. 17.

Chas. Munder.

DENVER.—We are practically cleaned up on comb honey, and have retained only sufficient extracted honey to supply our nearby trade. The prices quoted by us are what we charge to the retailers. Comb honey, extra fancy (per case) \$6.00;

Over a Quarter of a Century of Select Breeding } Makes Them } Thrifty Hardy Gentle and Beautiful

Forehand's Three-bands

The Thrifty Kind

Surpassed by none
but superior to many.

We have placed these queens on the market for over a quarter of a century, and each year the demand increases.

Doesn't this prove that they are good queens?

This year we are better fitted than ever before to fill the demands of our customers.

Deposit your order now and insure prompt delivery.

We guarantee pure mating, safe arrival, and satisfaction.

	1	6	12
Untested	\$1.00	\$5.00	\$9.00
Tested	1.50	8.75	17.00
Select Tested	2.00	11.00	20.00

Write for circular.

W. J. Forehand & Sons
Fort Deposit, Ala.

No. 1, \$5.00; No. 2, \$4.50. Extracted honey, white (per lb.) 17-18c; light amber, in cans, 15 16c. We pay for clean, average yellow beeswax, per lb., 38c in cash; 40c in trade.

The Colorado Honey Producers' Ass'n.,
Denver, Colo., Jan. 19. F. Rauchfuss, Mgr.

MONTREAL.—Very little honey in hands of apiarists, and light stock in hands of dealers. Comb honey, extra fancy per case) 24c; fancy, 22c; No. 1, 20c; No. 2, 18c. Extracted honey, white (per lb.) 19½c; light amber, in cans, 19c; in barrels, 18c; amber, 18c, in barrels, 17½c.

Gunn, Langlois & Co., Ltd.
Montreal, Can., Jan. 18,

HAMILTON.—There is no honey on this market.
Hamilton, Ont., Jan. 10. F. W. Fearman Co.

CUBA.—Light amber, in barrels, \$1.40 per gal.; amber, \$1.20. Clean, average yellow beeswax, per lb., 37c.

Matanzas, Jan. 14.

A. Marzol.

NEW YORK.—Arrivals by boat: 1,033 barrels, 8 casks Cuba; 11 barrels Haiti; 10 barrels Santo Domingo; 75 barrels, 15 half barrels, Texas. Domestic supplies very light. Export demand good, local demand moderate, market steady. Export space on ships hard to secure. Extracted honey: domestic, light color, 18-19c per pound; West Indian, export sales, 17-17½c per pound; local sales 16-18c per pound. Beeswax, demand brisk, market strengthening; dark 36-36½c, light 37-37½c per pound. Arrived, enroute to Cincinnati, 100 barrels honey from Cuba. U. S. Bureau of Markets.
Washington, D. C., Jan. 15.

NOTICE

Beekkeepers' Supplies

We are now located in our new plant equipped with the latest machinery for making supplies. Write for catalog, which will be ready for mailing in January.

We Can Save You Money

no matter how large or how small your order is. A trial will convince you. Quality first.

We also render your wax from old comb and cappings. Our charge is only 5 cts. per pound for the wax rendered. Our steam press extracts every particle of wax possible to get.

Give us a chance to bid on your wants.. Write for catalog today. All correspondence cheerfully answered.

The M. C. Silsbee Co., Avoca, New York

INVENTORY SALE

In making our annual inventory we find the following goods which we wish to move at once. Some are discontinued patterns, some are excess stocks, etc. On all we will make special prices as follows.

	Regular 1918 price	Sale Price
300 3-wire and wood Honey boards /10.....	\$.65 each	\$. .54 each
100 3-wire and wood Honey boards /8.....	.58 each	.48 each
200 C/10 Old style metal bound super covers.....	.20 each	.16 each
100 C/3 Old style metal bound super covers.....	.20 each	.16 each
2500 Danz. shallow extracting frames.....	3.50 per 100	2.60 per 100
100 12-lb. Shipping cases 4x5x1½ in 10's.....	2.00 per crate of 10's	.75 per crate of 10's
140 12-lb. Shipping cases marked 5¼ 3 rows in 10's..	2.00 per crate of 10's	.75 per crate of 10's
40 12-lb. Shipping cases marked 6¼ 3 rows in 10's..	2.00 per crate of 10's	.75 per crate of 10's
10 12-lb. Shipping cases marked 9¼ 4 rows in 10's..	4.00 per crate of 10's	1.50 per crate of 10's
250 24-lb. Shipping cases safety 4x5x1½ in 50's.....	18.50 per crate of 50's	12.50 per crate of 50's

All prices subject to previous sale. For further particulars address

THE A. I. ROOT CO.

873 Mass. Ave.

INDIANAPOLIS

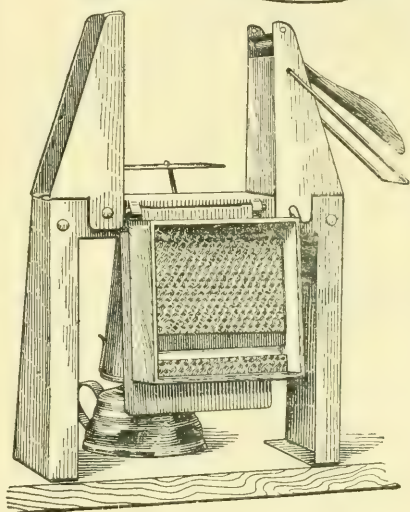
NEW BINGHAM BEE SMOKER



In 1878 the original direct draft bee smoker was invented and patented by Mr. T. F. Bingham of Michigan. Mr. Bingham manufactured the Bingham Smoker and Bingham Honey-knife for nearly thirty-five years; and in 1912, becoming a very old man, we purchased this business and joined it to our established business of beekeepers' supplies and general bee-

ware. Those who knew Mr. Bingham will join us in saying that he was one of the finest of men and it gives us much pleasure to help perpetuate his name in the beekeeping industry. Bingham smokers have been improved from time to time, are now the finest on the market, and for nearly forty years have been the standard in this and many foreign countries. For sale by all dealers in bee supplies or direct from the manufacturers.

Smoke Engine, 4-inch stove.....\$1.25
 Doctor, 3½-inch stove..... 1.00
 Two above sizes in copper, 50 cts. extra
 Conqueror, 3-inch stove..... .85
 Little Wonder, 2½-inch stove..... .65
 Hinged cover on two larger sizes.
 Postage extra.



Woodman's Section-fixer

A combined section press and foundation-fastener of pressed-steel construction. ONE OF THE GREAT ADVANTAGES this machine has over all others in the market, in the putting in of top and bottom starters is, YOU ALWAYS HANDLE LARGE PIECES OF FOUNDATION. You know how hard it is to set small narrow pieces for bottom starters. With this machine a large piece of foundation is set and the hot plate is again used to cut it off, leaving the narrow bottom starter. What is left of the large piece is then set for the top starter. THIS IS THE ONLY MACHINE ON THE MAR-

KET, from which the section always comes away right side up, with the large piece or top starter hanging down. It does not become loosened in reversing as with other machines.

Price of machine \$3.00, with lamp, \$3.40. Weight 5 lbs.; postage extra.

Tin Honey-packages

Our three-year contract is enabling us to make prices considerably under general market quotations. Let us hear from you, specifying your wants.

FRICTION-TOP TINS

	2 lb. cans	2 ½ lb. cans	3 lb. cans	5 lb. pails	10 lb. pails
Cases holding	24	24	...	12	6
Crates holding	...	...	...	50	50
Crates holding	100	...	100	100	100
Crates holding	603	450	...	203	113

SIXTY POUND SQUARE CANS

We are now booking orders and making shipments of 60-lb. cans from several different factories about the country. We believe it would be a wise idea to secure your supply early, as we have been told that the supply of tin plate will not take care of the demands. Ask us for prices, stating quantity wanted.

A. G. Woodman Co., Grand Rapids, Michigan

A Fortune in Bees

One of our large beekeepers in New York State last season secured \$10,000 worth of honey, and several in our immediate vicinity did very well, reaping \$1000 to \$5000 for their season's work.

They are planning now for next season. These looking ahead are those that will have next fall another good crop at remunerative prices. Would it not be well for you to look ahead and lay plans for next summer? besides, our government needs all the food possible to produce.

F. A. Salisbury, Syracuse, N. Y.

1631 West Genesee St.

Anticipate Your 1918 Bee Requirements Now

Help Us Co-operate with the Gov-
ernment by Ordering Your Bee
Supplies for Next Season Now. . .

Transportation conditions may not permit of prompt shipment later on---Now, of all times, the beekeeper "SHOULD NOT PUT OFF UNTIL TOMORROW WHAT HE CAN DO TO-DAY." You owe it to your country and to yourself to prepare at once for the gathering of the 1918 crop.

Have You Enough Hives?
Have You Enough Supers?
Have You Enough Frames?
Have You Enough Sections?

And have you enough of the rest of the things you will need?

The Lewis Factory is now operating night and day to take care of the season's demands. Help us while we are helping you---Place your orders now so manufacturers and dealers can help their country, your country, you and themselves by preparing now for your needs.

The New Lewis Catalog is now out.

G. B. Lewis Co. . . Mfrs. Beeware
Watertown, Wisconsin

GLEANINGS IN BEE CULTURE

FEBRUARY, 1918

EDITORIAL

LET US AGAIN emphasize that the beekeeper who has not yet ordered supplies for the coming season do so at once. At this writing, Jan. 15, freights, especially in the East,



**Don't Delay—
Order Supplies
Now.**

are congested as never before in railroad history. Many carload shipments have been lying unmoved on the railroad tracks for over a month.

The Administration at Washington has taken over the railroads and it is hoped that the present congestion will be relieved. In all events, war material and food stuffs have the preference.

The situation became so acute that a representative of Gleanings conferred at length with several representatives of the Sugar Division of the United States Food Administration, explaining that carloads of bee supplies and less than carloads were very much delayed and unless the beekeeper could have his goods in time it would materially cut down the production of honey, and we asked that bee supplies be given a preferential standing along with agricultural implements. While the Sugar Division could not give us any definite promise, an official told us that if we would furnish the Sugar Division with the car numbers, routing and other particulars regarding less than carload shipments, that office would do what it could to hasten delivery.

The railroad companies are powerless until the Food Administration makes a discrimination that will allow certain freights to be moved.

We don't hesitate to say that it is a serious situation that confronts the beekeeper today. In many cases supplies have been ordered and will be delivered soon. In other cases goods have already been received. The man who has not placed his order for his entire requirements for 1918, unless transportation conditions improve, may be in a sorry plight in March and April if he does not order at once. To get goods by express is very expensive, and that's what many who order late will have to do if they get their goods at all.

Just as we left Dr. Phillips, in Washington, the apicultural expert of the Bureau of Entomology, said: "You can't make it

too emphatic that bee-supplies should be ordered at once, if not already ordered."



THE EDITOR of Gleanings has been in the East to look up the sugar situation. Con-



**How to Get
Sugar for
Feeding.**

ditions are improving and the Food Administration, Sugar Division, at Washington, as-

sured us that there ought to be no lack of sugar within 30 or 40 days. As stated in January Gleanings, where beekeepers need sugar at once to prevent starvation, they should make a statement of the facts, the number of colonies and the amount of sugar needed, when the Food Administration will issue a permit by which they can secure the sugar required. Address the United States Food Administration, Sugar Division, Washington, D. C.

In one or two cases beekeepers have written us that they have gone to their local and wholesale grocers with a permit, but were unable to get sugar, as there were no stocks on hand, not even enough to take care of the limit allowed to the householder. In that case, we would recommend that the beekeeper apply to the next nearest wholesale grocery house, either thru his local grocer or in person himself, and continue the search from grocery to grocery, retail and wholesale.

Dr. Burton N. Gates, of Amherst, Mass., has made arrangements by which beekeepers of his state can get bee candy of the local dealers. They should apply to H. H. Jepson, 182 Friend Street, Boston, Mass.; A. C. Andrews, Springfield, Mass., Box 1474; Ross Bros. Co., 90 Front Street, Worcester, Mass.

Mr. B. F. Kindig, East Lansing, Mich., State Inspector of Apiaries, has arranged for beekeepers to secure sugar. Michigan beekeepers may write to him and he will issue a form by which they can secure sugar thru the Federal Food Administration for Michigan, which has directed that wholesalers supply beekeepers with sugar, so far as possible.

Where beekeepers are not able to secure sugar, or can't wait to get a special permit, as a last desperate resort we suggest that they ask for common cane molasses, sometimes called New Orleans molasses, for

spring stimulation and when all danger of the bees being confined to the hive by cold is past. Cane molasses has not been commandeered and, we are advised, can be obtained in small quantities. The objection to cane molasses is it contains a considerable amount of gum, according to Dr. Phillips, and will cause dysentery; but for use in the spring, for spring stimulation or as a last resort to prevent starvation, or at any time after the bees can fly once or twice a week, it will cause no trouble.

Where one cannot obtain any form of molasses or sugar, we would suggest the use of karo—for spring stimulation only and when the bees will not be prevented from flight by cold. While bees will not take raw glucose, yet the fact that karo contains 15 or 20 per cent of cane sugar or refiners' syrup, we are told, makes it acceptable to bees. We would not consider karo, however, equal to molasses made from cane but it may prevent bees from starving in the spring. Karo could be obtained probably in any quantity anywhere.

We caution our readers that the use of cane molasses or karo in the spring is accompanied by danger of unfavorable weather conditions that may keep the bees from flying and so result in dysentery.

To those beekeepers, in states where officials have not informed them as to how and where to get sugar for feeding, we say again: Write direct to the U. S. Food Administration, Sugar Division, Washington, D. C., stating your needs.

We suggest to all beekeepers needing sugar that you fill out the blank form* printed at the bottom of this page, swear to it (or affirm it) before a notary public or other official who can administer an oath, and send

such filled-out form to whatever source you apply for sugar for feeding, whether it be the Sugar Division, U. S. Food Administration, Washington, D. C., or a source nearer home. It will make your application doubly certain and forceful and more likely to secure promptest attention. Either copy this form as given below, filling out the spaces left blank, or cut out the blank below and fill it out.



THE EARLY WINTER prevailing generally thruout the East and Middle West, followed



General Wintering Conditions.

by zero cold with almost no break, has caused some concern to beekeepers.

There is no doubt but there will be some winter losses in the East and northern central parts of the country, and particularly in the New England states, where winter packing has not been practiced to any large extent. In most cases where the colonies have been put in the cellar or properly packed, the losses will not be above the normal, providing that zero weather does not continue unduly.

Conditions in the far West are much better. While beekeepers lost heavily in Idaho and Montana a year ago, the winter thus far in that section has been much more favorable.

As a rule, early cold, if it does not continue unbroken, does little damage except to bees in single-walled hives. Unfortunately many beekeepers, relying on their success in wintering in such hives during normal winters, are going to be caught this winter.

So far, no one needs to be alarmed unless he failed to pack his bees or has not pro-

*APPLICATION FOR SUGAR TO FEED BEES.

STATE OF.....

County of.....

I,, being duly sworn, state upon oath (or affirm) that the following statements are true:

I am the owner or have in my possession.....colonies of bees. The bees above mentioned will need sugar for food in order to live or be in suitable condition for gathering surplus honey during the season of 1918. I estimate that I will need..... pounds of granulated sugar for the purpose of feeding. If I am permitted to secure this sugar or any part of it, I will use it for food for the bees and for no other purpose, and if any remains unused at the beginning of the surplus honey flow, I will return it to the dealer from whom I purchased it or to whomsoever the Federal Food Administrator shall direct.

My postoffice address is.....

My nearest shipping point is.....

(Signature)

Subscribed and sworn to before me this.....day of....., 191..

Notary Public.

My commission expires.....

vided them with sufficient stores. Fortunately, as noted elsewhere, the sugar situation is likely to so improve that beekeepers will be able to get all the sugar they need to feed those colonies that are short of supplies.



THERE HAVE BEEN various conflicting reports in regard to drifting when bees are



Drifting Nuisance in Winter.

wintered in packing-cases, four colonies to the case. R. F. Holtermann and others who

have used the plan extensively in Canada say they experience no trouble with them. Others, however, who have tried it out complain that they have a good deal of drifting, with the result that one colony will have many bees and the other will have too few. The former may be starving and the latter may be dying of winter cold.

The cause of this drifting is plain. There will be little or no drifting providing the colonies are put into winter cases early in September. This is not so much because they need protection at this time as to get the bees to become accustomed to the changed appearance of their home. During the fall months they will gather pollen and nectar; and, with packing, all the brood will hatch. The result is that the early packing means young bees early in the fall. With lots of packing, young bees, and plenty of stores, a colony is almost sure to winter, and there will be little or no drifting.

But when bees are packed in November and December there will be more or less confusion and drifting. It is our rule, when we pack bees in quadruple cases, in November to move them in from an outyard and put them in the home yard or at another outyard in these big cases. They then have to mark their locations anew.



THE ORDER of the United States Fuel Administration, dated Jan. 16, placing a first



Coal in Bee Supplies Manufacture.

five-day and an every-Monday prohibition of the use of coal for all industries east of the

Mississippi (except a comparatively few enumerated in the order) found beekeepers' supply manufacturers in an exceptionally fortunate position. We say this, judging from the manufacturing conditions of the A. I. Root Co., and presuming these conditions are the same in the other supply manufacturers. This fortunate position is that the plant can run full force and consume far less coal than if it lie idle and use only the coal necessary to avoid injury to the plant from cold and freezing. This is because the plant, while running full, produces enough shavings, wood dust and wood waste to fire the boilers with the use of less coal

in addition than is necessary to use when not running full but merely to keep the plant warm and from injury. Accordingly, at this writing, it does not seem that the manufacture of beekeepers' supplies should be interfered with by this drastic order of the U. S. Fuel Administrator issued to conserve coal. It is probably a necessary order, and will work no harm in closing many places of doubtful use (and worse) one day each week.



IN CASE of long continued cold weather, so extreme that the cluster is unable to move



This May Save Your Bees.

to the adjacent combs of honey, the bees will starve with quantities of

honey but a few inches away. Altho opening hives in cold weather is always attended with more or less risk, and tho we do not care to be quoted as generally advocating such practice, still under the above conditions and having no other feed, it might be a good plan to remove an outer frame of honey filling the extra space with a chaff division board or packing, lay the comb over the cluster and again cover warmly. During this operation great care should be taken not to let too much heat escape, and not to jar the hive or disturb the cluster in the slightest. The beginner is specially cautioned concerning these last two points.



BEESWAX, the important by-product of the apiary, after having remained almost as constant



Attention to Saving of Beeswax.

in price as gold itself, has now for the first time in more than 30 years, jumped in

price very considerably. In keeping with the increasing number of plans for saving and conserving, it is quite fitting that beekeepers pay special attention to the saving of beeswax, for there is danger (in the mad rush for more tons of honey) of forgetting the ounces of beeswax. Gleanings believes that this is a mistake, and therefore is glad to give extra space to the discussion of beeswax—ways and means of obtaining it cheaply—that appear in this number.

NO RECEIPTS

Will hereafter be sent to subscribers who remit for their own subscription only, unless a receipt is specially requested, as the date to which a subscription is paid is indicated in due course on the mailing wrapper of this journal. We will, however, send a receipt to persons remitting for others, in order that such person may have evidence of having forwarded to us money entrusted to them; we will also receipt to the sender for money sent to us to pay for a Gleanings subscription that is given as a present.

BUSINESS MANAGER,
Gleanings in Bee Culture.

BEESSWAX is the most important by-product of the honeybee, and yet it has been neglected by beekeepers generally, and great quantities wasted. I can show where twenty per cent or more of the entire amount produced by the bees is thrown away or lost by carelessness or ignorance.

SAVING THE WASTE BEESWAX

The Importance of Beeswax as a By-Product of the Apiary; How to Render it for the Market

By Geo. L. Emerson

The Value of Wax.

First, let us consider its value. The demand is unlimited, and the price does not vary as greatly as does the price of honey. It would not be difficult for the producer to contract with any one of several firms to take all the beeswax he could furnish, and pay him a cash-on-delivery price during a period of several years. Could this be done with honey? Roughly speaking there are some two hundred million pounds of honey, about fifty million pounds of which is comb—an average of about twenty million dollars' worth of honey per year in the United States. The United States Bureau of Entomology estimates that the beeswax output is equal to about one-tenth of the honey value. Taking this as a basis, we have two million dollars' worth of wax. Now, if my contention is true that twenty per cent is lost to the producer, then the beemen are throwing away 400,000 dollars' worth of wax a year. If that money could be saved, and used to encourage the consumption of honey thru advertising and marketing, would it not be better?

Now, in our own state it is well known that we have shipped away over five hundred cars of extracted honey in one season, and we are beginning to use a lot of honey at home—not less than one hundred cars a year. If we produce six hundred cars of extracted honey, it would be worth something like nine hundred thousand dollars, and the beeswax ninety thousand dollars; twenty per cent of which would be eighteen thousand dollars. This, I believe, the beekeepers could use to advantage; and it is to bring it forcibly to their attention that I have taken this up.

From my constant association with the honey-producers for many years I have found that the average producer knows very little about beeswax and is not fitted with equipment to save this valuable by-product. Even some extensive producers who think that they are saving all it will pay to "fool with" are losing as high as thirty per cent, and only a very few are making an honest effort; and most of these, like myself, acknowledge only a certain degree of success; but I feel positive that I can extract twenty per cent more than was originally taken if I have all the waste, slumgum, and scrapings from the bottoms of the cakes of beeswax.

Never put a cover back that needs scraping. When uncapping, scrape all bits of comb from the outside of the frame. Do not allow moths to eat up comb.

If you cannot save them, melt them up. The wax will furnish you with nice new sheets of foundation and pay for your work besides. Melt up the drone combs at the end of the season. Do not leave them in the hive for the queen to lay in in the spring.

Equipment.

For those who produce extracted honey a capping-melter is a necessity. In these times of disease one cannot afford to have the old sun extractor around to spread contagion. The capping-melter, a good wax-press, a large wax-kettle (made of galvanized iron), and a wooden-settling tank, to hold as much wax as you would ever have to cask in one batch, and you have an equipment that will take care of all conditions, if you know how to use it.

Preparing for Market.

In preparing your wax for market, remember that the longer it is kept hot the better it will settle; and the principle worked on by the larger refiners is to have such a quantity melted at one time that it will remain from twenty-four to thirty-six hours in a liquid condition before it is drawn off in buckets and allowed to cake. Several faucets are put in the large wooden tank at various heights from the bottom, so that the clean wax may be drawn off and the refuse allowed to remain in the tank. Old five-gallon honey-cans are commonly used by the beekeepers to cask the wax in; but they should be clean, or the dirt which is on them will adhere to the wax and spoil the outside appearance of the cake. One should be particularly careful that there be no honey on these cans, for it seems to make the wax adhere to the tin so strongly that it is almost impossible to remove the cake without cutting the can from it. If there is any dirt or foreign matter on the bottom of the cake, scrape or hew it off and render the refuse over at the next melting. If you use sulphuric acid be sure not to use too much, and never use it when the wax is in metal, as the acid will eat off some of the tin or iron and darken the wax. Also, be very sure that there is no honey or honey-sweetened water with your wax when acid is used. The acid will burn the honey black and will darken the wax. Be careful not to burn the wax in cooking; keep plenty of of water under it; for if even the slumgum burns to the kettle it will not only affect the color, but will leave a burned offensive odor in the wax that is very difficult to remove.

A simple and inexpensive method of re-

fining is to take the head out of an old barrel and strain the hot wax into it, having about two inches of hot clear water in the bottom. After you have the whole batch in, or the barrel full, pour in a teacupful of sulphuric acid, or less, in proportion to the amount of wax or the color of it. Wax from cappings is generally much lighter, and is better if very little or no acid is used. Wax taken from old combs is much more difficult to cleanse, owing to the presence of so much pollen. The wax should be as hot as possible when put into the barrel; and after pouring in the acid it should be stirred with a stick long enough to agitate it clear to the bottom. In half a minute you will see the wax change to a lighter color. Now cover the barrel so as to keep the wax hot as long as possible. Use old sacks, burlap, or even straw around the outside, so as to retain the heat. When cold, remove all the hoops except the bottom one and turn the whole thing over on a clean board. By using a little care the barrel may be lifted off the cake and the hoops driven back on again without allowing it to collapse. By keeping the barrel covered up

with a little water in it, it will always be in a condition to use again when needed again.

A great percentage of the refuse on the bottom of the cakes is wax; but it is so mixed with pollen and other matter that it is not practicable to render it over more than once, unless one has a large quantity. By keeping it hot for several days without boiling, or other agitation, it will gradually separate and leave another cake of wax on top.

Shipping.

In shipping wax it should be double sacked, the tags numbered on the back, and a record kept showing the gross and net weight of each sack. Then if one sack is lost in transit it is possible to tell the transportation people exactly how many pounds is gone. A copy of this record should be sent on to the buyer with bill of lading. Never wrap wax in paper, as the paper sticks to the cakes and makes trouble.

[The prices considered in this article are not war prices but based on normal conditions.—G. L. E.]



THERE being on hand last season an accumulation of nearly 2000 old combs I decided to carry on some further experiments in wax-rendering.

I have often wanted to try laying a comb on a piece of burlap stretched over a screen, pouring a stream of boiling water on to it until "mushy," then constantly rubbing the refuse with a wooden paddle. My idea was that the stream of boiling water would wash the wax from the refuse down thru the burlap into the can beneath. The boiling water could be pumped in a continuous stream from the bottom of the can up on to the refuse. I tried it; and, while the plan possessed many advantages, it had one fatal disadvantage. Even tho the stream of boiling water was kept running for nearly 15 minutes, nearly 20 per cent of the wax remained in the cocoons; in fact, I could not succeed in washing out the last particle of wax, even with much vigorous rubbing. The last 10 per cent refused to separate.

I next turned my attention to the centrifugal scheme for rendering wax—a plan that I tried on a small scale about ten years ago. I rigged up a cylindrical basket made of wire screen to take the place of a reel in a small honey-extractor. The bottom of this basket, which was smaller than the top, was made of a galvanized iron wash-dish.

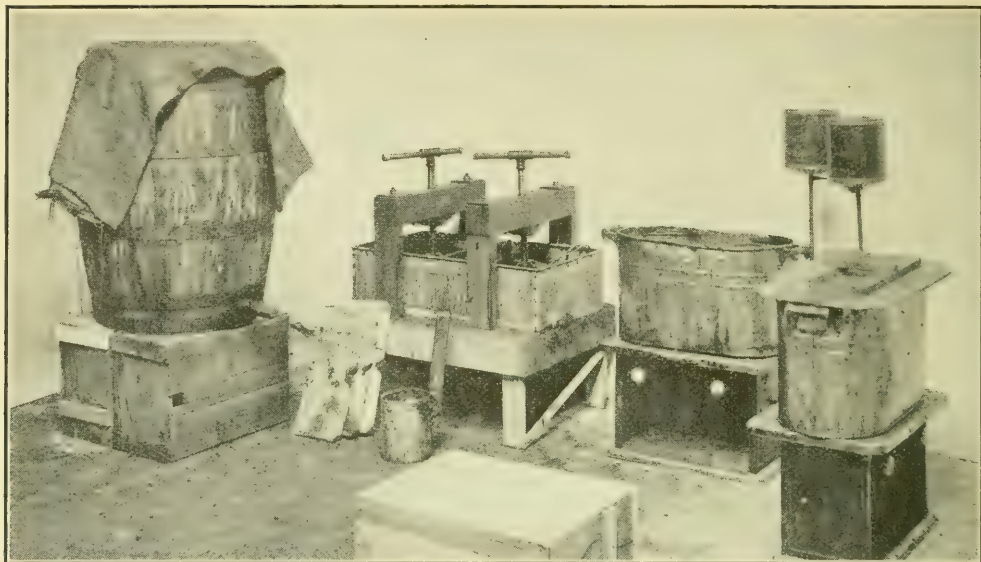
When everything was ready I broke up

INTENSIVE WAX RENDERING

*How to Do Rapid and Efficient Work
with Only Half a Barrel of Water
and a Very Simple Equipment*

By H. H. Root

several combs, placed them in the screened basket, and poured boiling water over them until they were reduced to a thin mush in the wash-basin forming the bottom of the basket. Then, seizing the handle of the machine, I gave it a few rapid turns and found that the refuse had left the wash-basin and was climbing up the sides of the screen where it was deposited in a thin layer all the way round. I whirled it about half a minute, then poked this back into the wash-basin and again poured in boiling water. After repeating this four or five times I expected to find the refuse comparatively clean of wax, but was very much disappointed to find that, when I picked up a handful of it and squeezed it, the yellow wax would show all too plainly in the ridges between my fingers. I worked with one lot a full half-hour, the extractor meanwhile being set over a gas-stove, so that I could continually draw pails of boiling water from the gate at the bottom and pour over the refuse, washing it down into the wash-basin. After my half-hour of treatment there was wax—entirely too much—left in the cocoons, even tho many of them were fairly imbedded into the screen. I was forced to conclude, therefore, as I had years ago, that the method, while a very interesting one, is



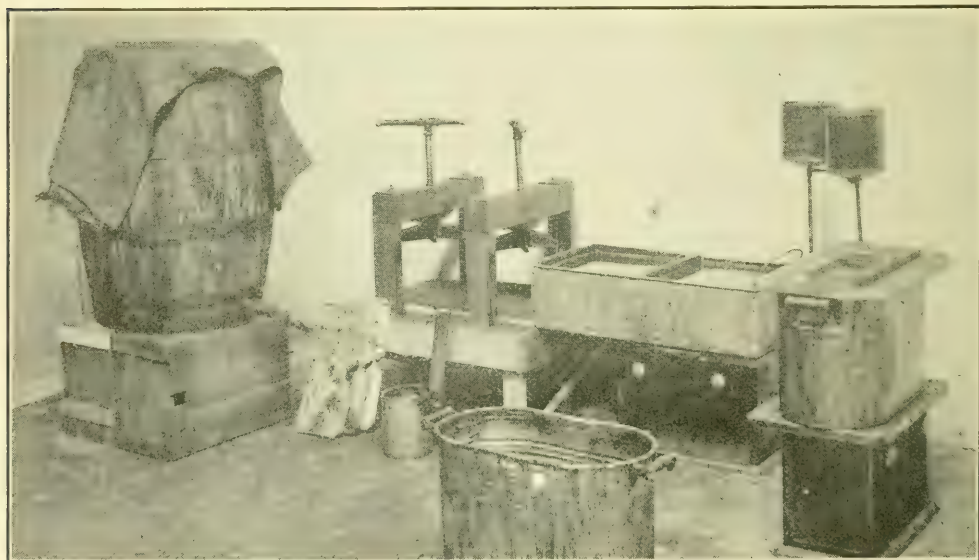
An outfit for rendering wax on a large scale. Only half a barrel of water is needed and as this can be used over and over again there is little heat wasted. The comb is melted in the two wash-boilers and after being transferred to the double press the hot water and wax are pressed out and poured into the barrel. Whenever more water is needed it is drawn from the bottom of the barrel, the same water being thus used over and over. About 40 combs fill the boiler and one boiler-full just fills the press.

an impractical one on account of the waste of wax.

The New Wax-Press.

Convinced that nothing but intermittent pressure on melted comb under hot water will extract all the wax, I turned back again,

as I always do, to the wax-press. This time wanting a press of larger capacity than that of the regular Hatch wax-press, I recalled the hot-water press that I used to use so much when I first began experimenting with wax-presses about 15 years ago. This had a round



To prevent chilling of the hot water and wax the boiler is set off the stove and the press can draw out over the fire where it is covered up and allowed to stand until the water boils. During this time the comb is again saturated with hot water. The can is then slid back under the screws and the pressure applied. Each lot of comb is pressed three times being brought back to the boiling point between each pressing. Allowing the water to boil results in nearly two per cent more wax.

can 20 inches in diameter and 16 inches high. It was made so that it could be set directly on a stove, the cross-arm holding the screw being secured to the hoop at the top of the can.

This old press worked well. The refuse after pressing was quite clean of wax; but I do not like a press that has to be located over a hot stove, on account of the fact that it is so very inconvenient. And, there is always the danger that, during the pressing, the heat can not be controlled, and the wax will boil over, resulting in a serious fire.

In the November issue of *Gleanings* for 1917 I described a method of introducing a small jet of steam into the Hatch wax-press, during the process of pressing, to prevent the water from chilling. This plan works to perfection for a small press, but is not very easily followed in case of a larger press unless one has access to steam from a large boiler.

In thinking over the subject one day, it occurred to me that there is really no need of having any heat applied to the contents of the press during the act of pressing. It is when the pressure is released so that the refuse is again saturated with water that the boiling is desirable. It was easy to build a press so constructed that the can and its contents could be pulled out over the stove. After using the press in rendering some 1500 combs I decided that it was not only the most satisfactory scheme for rendering wax I had ever tried, but also the most economical one—economical in the amount of fuel used and in the reduction of waste. Repeated tests showed that the total waste was less than two per cent when the screws were run down three different times, the can and its contents between each pressing being drawn out over the stove and left until the water boiled. Thirteen batches of comb averaging 40 combs to the batch were pressed in this manner in one day, the total amount of wax obtained in this manner being 142 pounds.

If the press were used as so many wax-presses are used (pressure applied to the refuse but once), its capacity would be nearly 400 pounds of wax in a day; but I do not recommend such a process, for there are few whose time is so valuable that they can not afford to wait for three separate pressings, the two second ones securing six to eight per cent more wax. Of course, as I have said so many times, there is no method of rendering wax that gets it all. An amount of waste not over two per cent is a good average result, and indicative of an efficient process of rendering. Plans which show a waste of four to six per cent of wax are antiquated and should be abandoned.

The construction of the press is clear from the illustrations. The rectangular can is 16 inches wide and 30 inches long, having a capacity of nearly four times that of the regular Hatch press. The contents of a whole boiler of melted comb is dipped and poured into the press at once—from 40 to 60

combs, depending on their age. In the bottom of the pan are cleats covered with screen; and the follower, made of $\frac{7}{8} \times 1\frac{1}{2}$ -inch cypress cleats, is also covered with screen on the under side. There is screen, therefore, above and below the refuse; and the follower itself, being built of these cleats spaced about $\frac{3}{8}$ of an inch apart, makes it possible for the wax when it is pressed out of the refuse to find its way immediately to the surface of the hot water. There are two layers of these cypress cleats, forming the follower, the lower layer placed vertically and the upper layer nailed flat side down on them. To prevent the spider on the lower end of the screw from crushing these cleats under the pressure, four straps of iron are screwed lengthwise of the follower on top of the upper tier of cleats.

Two screws are used instead of one at the suggestion of C. A. Hatch, the originator of the Hatch wax-press. I have tried large presses built with one screw in the center, but the arguments are all in favor of the longer, narrower can with two screws; for with this construction it is almost impossible to have one side of the "cheese" thicker than the other. For the greatest efficiency in wax-rendering, it is absolutely essential to have the pressure the same and evenly distributed. With a single screw, if one part of the contents of the burlap happens to be a little thicker than another it is impossible to keep the follower absolutely level. As the screw is turned down, the unevenness grows worse rather than better. This not only puts an uncalled-for strain on the screw itself, but results in inefficiency in the operation of the press, since there is always wax left in that part of the "cheese" which is thicker than the rest.

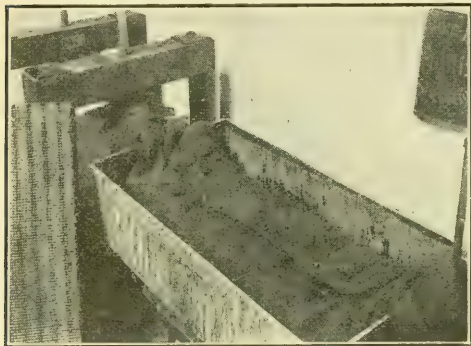
The Equipment Needed.

To render wax from old combs to advantage, a suitable equipment is necessary. There should be three tin wash-boilers, a water-tight barrel with a one-inch auger-hole close to the bottom containing a well-fitting plug, and two two-burner gasoline-stoves or



When the press is drawn out over the stove, the screws are entirely out of the way and it is therefore an easy matter to refill. A burlap 40 x 70 inches is used in order that the edges may be long enough to fold over and pin.

their equivalent. A cookstove would answer the purpose just as well, altho, being higher, it would not be quite so convenient. A large dipper is also needed, and this can easily be made by nailing a wooden handle to the side of a 10-lb. pail. The burlap used for holding the melted combs should be strong, and without holes or weak places. The size best suited for the purpose is 40 x 70 inches.



After pouring in the boiler full of melted comb fold over the sides of the burlap, with the edges doubled, and pin with five large nails.

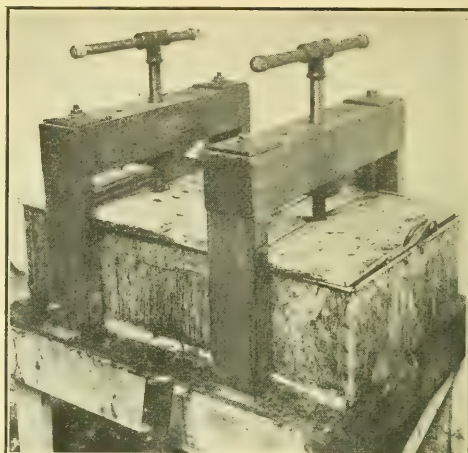
Half a dozen pieces should be sufficient for 500 or 600 pounds of wax. Half a barrel of water is needed. This can be used over and over again for several days if desired. If the barrel is kept covered up at night the water will still be quite warm in the morning, so it does not take so long to heat up as at first. If the water is hard, it pays to soften it with powdered borax, altho rainwater is best.

How to Proceed.

Fill two wash-boilers two-thirds full of water and put them over the stove to heat. When the water in both boilers is boiling, start putting combs into one, which I shall call No. 1, two or three at a time, poking them down in with a stick. Pour the boiling water in No. 2 into the barrel and cover



After pinning the sides, fold over the ends of the burlap and pin with two nails. As soon as the follower is laid on the press can and its contents are slid under the screws. Being hot, the can slides as easily as tho it were on rolls.



Once under the screws, and the pressure applied, four boards are laid over the top of the can with notches to fit around the screws. These help to confine the heat.

with an old piece of carpet to prevent loss of heat; then fill No. 2 again two-thirds full of cold water and put on the stove as before. Continue putting the combs into No. 1, poking each two or three down carefully. If the combs are old and tough the boiler will not hold more than 35 or 40. If the combs happen to be fairly new, as many as 50 or even 60 can be put in at a time on account of the fact that there are fewer cocoons. When all the combs are in, cover the boiler by putting over it a few thin boards cleated together. Do not attempt to start pressing before the contents have come to a boil. The mere fact that the comb seems to be



Likewise, when the can is over the stove waiting for the water to boil, the boards should be put on so that the water will boil more quickly.

melted and mushy is no indication that it is hot enough. Stir occasionally; and when the boiling commences, take the cover off to prevent the wax and water from boiling over. If it starts to boil over, stir it a

little with a stick; or, in an emergency, lift it off the fire altogether. Usually, however, this is not necessary.

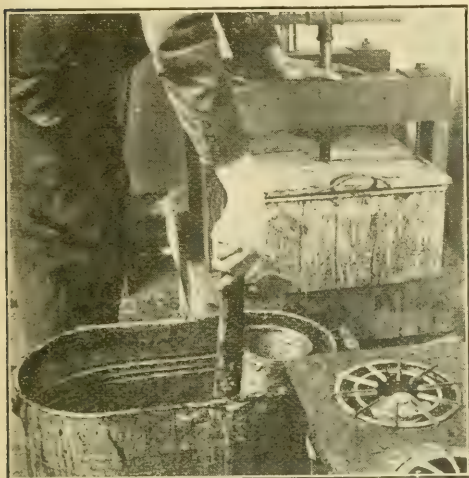
Put the cleated follower into the press-can; push the can under the press and turn the screws down. Draw off a couple of pails of hot water from the barrel and pour into the can so as to heat thoroly every part. Take boiler No. 2 (containing water only) off the stove and put the stove in a position in line with the press and eight or nine inches from it. Draw off the water in the press-can; pour it back into the barrel, close the gate on the end of the can, and, after raising the screws, draw the can out over the stove. There will be enough water in the bottom to prevent burning. Take out the follower; spread one of the pieces of burlap evenly over the can, tucking it down into the corners, and dip about half the melted



Hot water splashed over the follower rinses off the coating of wax left after the press has been drained.

thoroly lubricating every surface. The longer the can is used, the easier it slides back and forth.

With the can in position, turn the screws down slowly. Especially at the start, do not make the fatal mistake of turning the screws down to the limit without stopping, for it is



The screws are run down three different times. After the third time, while the pressure is still on, the gate is opened and the wax and water allowed to run out into a boiler on the floor. A dipperful of water should be caught first to be used in rinsing out the wax later.

combs in boiler No. 1 into the burlap. Then pick up the whole boiler and pour in the rest. If there is a great wad of wires, as there will be if the frames were wired originally, pull these apart with a stick enough so that they will not all be in one place. Fold over the sides of the burlap, pulling over enough so that the mass is perhaps two inches away from the edge of the can, and pin with five large nails; then fold over the ends and pin with a couple of nails. It is better to double the edges so the nails will not tear the threads. Be sure that there is no wad of burlap in any one place, and that the edges lie smoothly. Put the follower over the burlap, screen side down, and quickly slide the can under the press. The can being hot it slides almost as if it were on rollers, especially after a few drops of wax have dripped on to the platform,



After the third pressing the wax and water are drawn off and the follower and "cheese" taken out. Before drawing the press can out over the stove preparatory to refilling, a little water is poured in to prevent burning the bottom of the can.

almost sure to burst the burlap. (If you burst the burlap just once you will always afterward be careful.) Turn the screws down only as fast as they turn easily, therefore. As soon as they turn a little hard, wait until some of the wax and hot water have had a chance to ooze out. It is all right to apply considerable pressure when the screws have been turned down nearly to the limit, for then the "cheese" contains so little liquid that there is practically no danger of bursting the burlap.

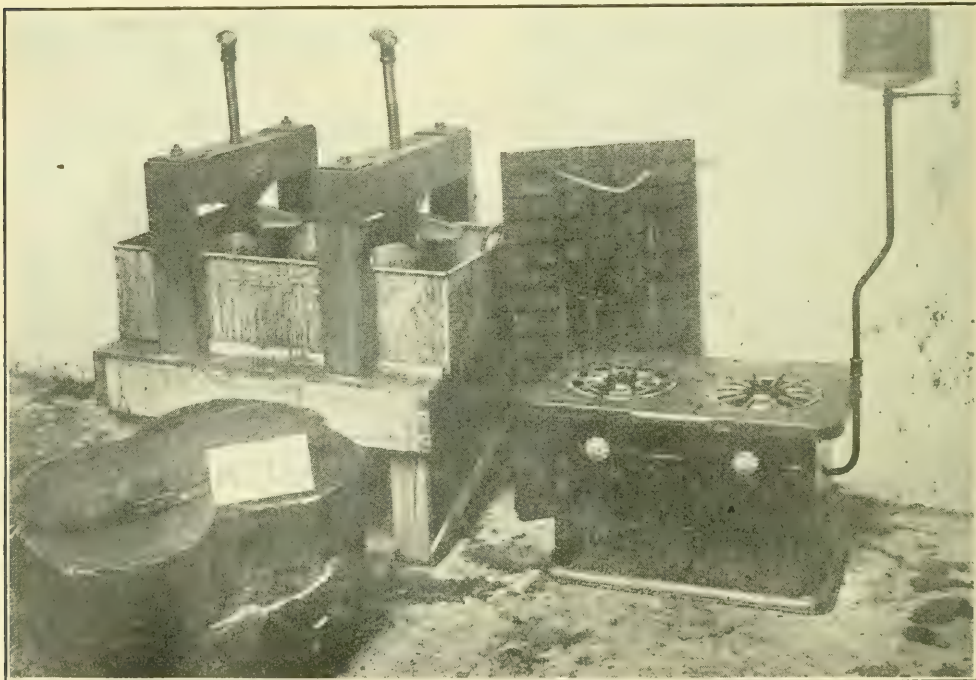
As soon as the can has been slid under the press, fill the empty boiler (No. 1) two-thirds full of hot water again from the bottom of the barrel and put it on the stove by the press. Put boiler No. 2 (which should now be full of partly melted comb) on the other stove to finish heating for the next pressing.

In order to make the process continuous, start putting comb in boiler No. 1 again, now on the stove by the press. Two lots of comb are thus in the process of heating at the same time, the one to be pressed next being the nearest finished, while the other is just starting.

As soon as the screws are down practically as far as they will go, release the pressure, turning the screws up out of the way; lift boiler No. 1 temporarily off the stove and pull the press-can out on to it. Cover it with short boards cleated together and leave it in this position until it comes to a boil,

then quickly slide back under the press and press again. Repeat this process until the batch has been pressed three times. Between pressings always draw the can out over the fire to come to a boil. The object of this is to permit the refuse to become saturated again with boiling water. Heating to the boiling-point between each pressing makes possible a saving of about two per cent of wax. Whenever the press-can is not occupying the stove the boiler should be put back over it, so that the heat will not be wasted. The contents of this boiler, therefore, has the intermittent heating while one batch is pressing, then during the pressing of the next batch it is transferred to the other stove where it has constant heating so that it will be ready by the time the press is empty again.

As soon as the screws have been turned down for the third time, practically as far as they will go, place a third boiler under the gate while the screws are still down and open the gate. Catch a dipperful of the water as it first comes out of the press and set it on the floor. When all the wax and water have run out, splash the hot water in the dipper over the follower while the screws are still turned down, thus rinsing off the coating of hot wax. Then tip up one end of the press so as to drain out the last of the water and wax into the boiler. Pour this hot water and wax immediately into the barrel and cover with the old carpet. The



While it sounds like a tedious process yet as a matter of fact it is possible to press a batch of 40 combs every 45 minutes. Thirteen batches were pressed in a single day yielding in all 112 pounds of clean yellow wax. The small cake on top about $\frac{3}{4}$ inch thick represents the amount of wax in a boiler after one batch is pressed,—about 10 pounds.

wax will rise to the top; and, when more hot water is wanted a little later, another boilerful may be drawn from the hole at the bottom.

As soon as empty, draw the press-can out over the stove. Take out the follower and the "cheese" and put the latter to one side for the present. If there is not enough water in the can to prevent burning, throw in a couple of quarts with the dipper. Spread a fresh burlap over the press-can and proceed as before. Later on, when there is time, the first "cheese" set aside may be unpinned and the refuse shaken out. The burlap should be rubbed between the hands so as to remove the cocoons that have imbedded in the cloth. Much depends on having the burlap clean when it is used over again.

A little experience will determine how much water to put in the boilers. There should be enough so that the surface of the liquid will be about an inch from the top of the press-can, when the follower is submerged by the screw. If the press-can is too

full it makes it difficult to slide back and forth without slopping, and if there is not enough, it detracts from the efficiency of the method. During the pressing, it is a good plan to cover the can with four boards, notched at one edge, to surround the screw. This confines the heat and makes it possible to do faster work.

The process as described in detail sounds complicated, but is really very simple. It is easy to finish a batch every 45 minutes. The average amount of wax secured each time is 10 pounds. As mentioned in the early part of this article, we pressed 13 batches in a day and secured 142 pounds of wax in all. The refuse, moreover, when we were thru with it, contained less than two per cent of the original amount of wax.

Before starting work the second morning the cake of wax on top of the water in the barrel should be broken up and taken out. The pieces require only a little scraping on the bottom to be ready for market. The water, still warm, is quickly heated so that the work can be resumed very shortly.



LAST year I rendered about a thousand pounds of beeswax. The method which I worked out for rendering is, I believe, for the average beekeeper a little ahead of any plan I have seen described. I do not mean that it will give more wax from a given number of combs than other methods; but for a person who does not care to buy a press and special apparatus I think it is the method to use.

The press is the most important part of the equipment. The main part consists of a box about 16 inches long, 14 wide, and 10 deep, with a tight bottom. Slat about $\frac{1}{2}$ inch square and 10 long are nailed vertically $\frac{1}{2}$ inch apart on the inside of the sides and ends. A hole about one inch in diameter is bored at the bottom on the middle of one side, and a short tin tube nailed on the outside as a spout. On two boards, which are 11 by 13 inches, are nailed $\frac{1}{2}$ -inch slats crosswise, and $\frac{1}{2}$ inch apart; and on top of the slats is nailed a piece of $\frac{1}{2}$ -inch wire cloth of the same size as the boards. One board is to be laid on the bottom of the box, with slats and wire cloth up; the other is the "follower," and goes on top of the burlap with the slats down. The bench-screws cost 25 cents. The whole press can be made in a day.

In addition to the press, two tanks are needed—one to melt the combs in, and the other to run the melted wax and water into

UNHEATED WAX PRESSES

Two Beekeepers Describe Their Methods of Pressing Wax in the Unheated Type of Press

By Oscar Ritland

For the former I use an old honey-tank about 30 inches in diameter and 30 inches high with a cover on it, and for the latter an old Novice extractor-

can. These tanks both have faucets at the bottom; and with the method I now use, tanks without faucets could not be used, as one of the main points in the system is drawing the hot water from under the melted wax and using it over and over again. A few pails are also needed for dipping up water and melted comb.

It is a good plan to work out of doors where there is always plenty of room, and no harm done if one spills some of the black water. (The water soon turns dark if the combs are old and black.) I also prefer the summer time to do the work; and the hotter the day the better. Another advantage in doing the work outside and away from the buildings is that there is no danger of a costly fire in case the wax should boil over on the hot stove and ignite, as wax always does when it strikes a redhot stove.

I set up an old cook-stove and start a fire in it. Into the tank on the stove is poured about 40 quarts of water, making it about one-fifth full. When the water gets hot I add old combs until the tank is half full when they are melted. This may be 40 Langstroth combs, more or less, depending on how old and black the combs are. It is well to keep a good fire so that

the combs will melt as rapidly as possible; for as soon as everything is melted and the water boils, one is ready for the first pressing.

To get the press hot, I draw off a pail of boiling water from the tank on the stove and pour it into the press. I let it stand a few minutes, then draw it off and pour

cork is pulled and the contents of the press run into the tank below. After repeating the washing process again the slumgum will be practically free of wax, and may be shaken out of the burlap. But before doing that I draw most of the water from the tank under the press and pour it back into the melting-tank so it will be boiling when the slumgum is shaken out, and I am ready for pressing the next lot.

As the press is now hot, no heating will be necessary as in the beginning, and another pail of melted combs is dipped into it and the pressing process repeated.

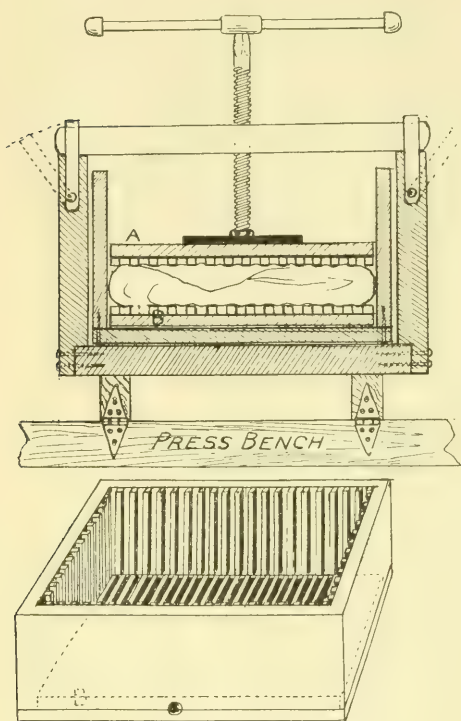
If the weather is warm, and a good fire kept going, several hundred combs can be rendered into wax in a day, the same water being used over and over. Of course some water disappears thru evaporation and in the slumgum, so it will be necessary to add a pailful of water occasionally. When the first half-day's work is over the melted wax may be dipped into molds and allowed to cool.

With this method that I have given I have been able to get nearly all the wax from old combs. Out of one lot of 1700 Langstroth combs I secured 535 lbs. of wax, or a little over 3.1 lbs. from every 10 combs. The average Langstroth size of comb, however, does not contain as much wax as this—about 2½ to 2¾ lbs. from 10 combs being about the average.

In rendering beeswax one must work rapidly when doing the pressing, for the secret of getting all the wax is getting it pressed out before some of it cools enough to harden.

I have never had any trouble from bees bothering when I was melting combs out of doors; but I did the work when the honey-flow was good and the bees had no time to think of robbing.

Elroy, Wis.



Oscar Ritland's wax-press made of heavy plank.

back into the tank on the stove. After repeating this two or three times the press will be boiling hot. I then dip a pail of the melted wax from the tank, letting the pail go down deep enough so I get some water too. This I pour into the press on top of the burlap that has previously been placed there; and after folding the corners I put on the follower. The iron plate that goes on top of the follower is loose; and between pressings it is kept on the stove so that it helps to keep the wax melted until it is run out of the press. Pressure is now applied, and the wax comes to the top of the water. The pressure is released and the follower lifted (by a wire attached to it) enough for the water to soak into the slumgum again. After pressing again, the cork is pulled out and the wax and water run off into the tank placed underneath to receive it, the press being tipped up to make it run out faster. There will still be some wax left in the slumgum, so I draw a pail of boiling water from the tank on the stove and pour it into the press. This is allowed to soak into the slumgum as before, and pressure applied. Again the



A WAX - PRESS WHICH NEVER CHILLS

Having seen and worked with many different wax-presses, I have finally invented one of my own which I have termed "the hard-wood slat press." This box, which is 14 x 14 x 14 inches, and 2 inches in thickness, is set three-fourths of an inch deep into the two-inch floor or platform. The lower edges of the box are set in white lead, and there are also long screws running thru the bottom up into the sides.

The platform is 2½ inches wider than the box, and on the under side of the platform are two stringers thru each of which a ½-inch anchor-rod passes above, loops over a 4 x 4 cross-arm of the same length as the stringers, and then passes down to the opposite stringer, where it is attached with a washer and burr, and thus the four ends of the rods are attached at the four corners of the platform. The cross-arm is not fastened to the rods, but is held up in place

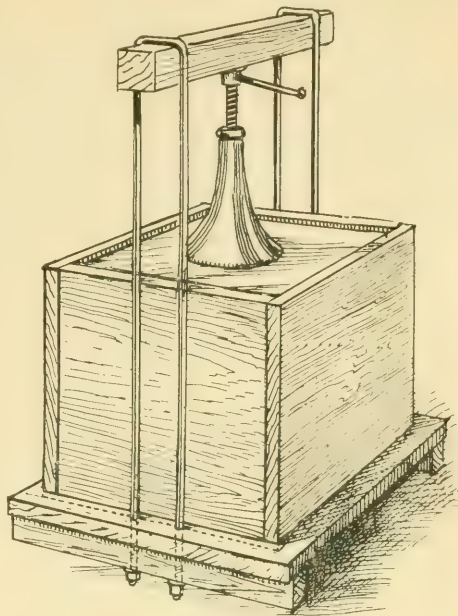
by two $1\frac{1}{2}$ x 1-inch vertical strips of wood which are attached to the platform midway between the two ends of each respective rod. If the cross-arm becomes loose, it is only necessary to tighten up the four burrs.

I use a three-ton jack-screw with this press. The plunger has straps for handles, and is made very strong of 2-inch lumber with the grain of the wood turned at right angles. For a spout I use a $1\frac{1}{2}$ -inch nickel-plated pipe such as plumbers use, stopping it with a wooden plug when not in use. The inside of this press has $\frac{3}{8}$ x $\frac{3}{8}$ -inch spaces intervening. Each side of the inside has a full sheet of smooth roofing-tin nailed over these $\frac{3}{8}$ -inch strips, leaving $\frac{3}{8}$ -inch passages between the tin wall and the sides of the press. Up and down in each of these passages I have made a row of 8-penny nail-holes thru the tin. The holes must not be too small nor too large. The slick tin makes the cheese slip down easily, and the rows of holes between the slats take care of all of the wax and water, or whatever liquid may pass thru. In this way the entire heating surface is on the tin, which therefore keeps just as hot as the cheese, and the contents goes thru the holes right down on the outer surface of the tin and never touches the press-walls. Thereby the cheese never gets cold while in the press, and boiling water never needs to be thrown in when getting ready for another cheese, altho the water may be replaced when it becomes too thick and sticky.

The bottom of the press has the same size of strips as the sides, but there are two layers which are crossed and have a half-inch space between. On top of the cross-slats there is also a heavy $\frac{1}{8}$ -inch-mesh wire cloth for the cheese to rest on.

With this press it is not necessary to have a hot-water and wax overflow, as everything

passes out of the spout. The plunger never gets daubed up with wax, and is always nice and clean to handle. Under this spout I use a water and wax separator, and a sepa-



In this illustration the four ends of the rods should be attached to the four corners of the platform. Narrow uprights are used to hold the cross-

rate screen to catch the slumgum in case I should get a sack with a small hole in it, or pour some of the contents out of the sack. By this method, as soon as my wax is run thru, it is in marketable shape.

Imperial, Cal.

F. J. SEVERIN.



THAT DISAPPEARING DISEASE

Suggestions About the Name, the Cause and the Cure

Is "disappearing disease" the right name for the malady so designated?

Certainly the bees disappear; and before the disease disappears, anticipated surplus also disappears (if anything you haven't got or can't see, can disappear). Nosema apis sounds more scientific, but we have the word of eminent authority that this is and has been found present in nearly every bee examined and, if it is found in healthy bees, surely we cannot consistently call our newly found disease by this name, nor can we reasonably insinuate that this is the cause. The name of "Isle of Wight disease" is tacked on presumably just because our British cousins in that vicinity first reported it,

but it may previously have been prevalent somewhere else in the hands of those who did not report, or, if they did report, only said their bees died. It will be remembered that many who kept bees on the lower Columbia River blamed moldy combs when they first reported that their bees died, but later foul brood was found to be the cause, and moldy combs the result. Likewise, how many have blamed moths for killing bees when their colonies were queenless and the moths simply took advantage of their weakened condition, and finished the job.

My individual experience with this trouble seems to be very much in line with that of others who have reported. Seemingly all reports agree as to weather conditions at the time of the visitation of the epidemic. A'l seem to unite on this circumstance, while

FROM THE FIELD OF EXPERIENCE

some offer, as an additional cause, lack of sufficient ventilation or air currents.

Accepting the theory that, if we can find the cause, a remedy will suggest itself, I offer the following, with the reasons for the said offering:

There must be a cause, and as wet and unsettled weather invariably prevails when the trouble appears, is it not fair to assume that part or all of the trouble can be charged to unfavorable weather conditions and not to individual colonies? It is true that some colonies are apparently immune, but of mine the best and most active were the first to be affected, the hardest hit and the most rapidly destroyed. Some were already working in two supers and were in a very populous condition, while but a few days after being stricken they were down to a hatful. The season was normal as to the time of orchard blossoming and as the first appearance of the trouble was just before the apple trees had reached the period of full blossoming I at first attributed it to arsenical poisoning by some who had sprayed too early. I found this incorrect, however, as none had sprayed at that time.

The weather prior to the attacks had been favorable and the bees were in excellent condition, really a little earlier than usual. Next I thought it might be a case of paralysis, but when, the next day, others were in the same condition, I began to take notice, and found it was not paralysis. By this time the epidemic had become fairly general in our vicinity and many appeals were made to me for assistance and help. This was a case of "physician, heal thyself," as I was in the same condition and could offer no cure but hope. Hope was deferred, and so was the good weather. Meantime the ground was covered with bees in all stages of the disease, but upon examination I could not find a single cell of hatching brood that was not apparently healthy, and healthy bees were hatching by the thousands. The temperature outside was about normal and bees that were able were working between showers, but there was an excess of moisture that soaked and saturated every opening blossom. Drones also were as bad off as workers.

By close watching I thought I found the older bees or the flying squad repelling the disease better than the rapidly hatching youngsters. This was noticeable especially in colonies re-queened where the difference in color made this more apparent. And right here was where I got in bad, for the uninitiated immediately claimed that the black or native bees were immune, and only the newer Italians took it and succumbed. I shall have to admit that it did look suspicious until I noticed that the blacks and natives were not flying as much as the more active Italians. So noticeable was this

difference in activity that it suggested that the trouble might be due to the moisture-soaked nectar that the active bees were bringing in. Is it not fair to assume that the watered nectar deposited in the cells might ferment or sour sufficiently to cause trouble when used as food by the young, by newly hatched bees and drones? Note that nothing apparently wrong was perceptible until after the young bees had fed themselves.

You may ask why the bees and not the queen should suffer from eating this food. I have to reply "I don't know," but I do know the queens were not affected and laid right along; also that queens removed from sick colonies produced normal, healthy bees in other colonies. But by the time these young bees had hatched, the weather had become settled and warm, which suggests that weather conditions alone were responsible. Moreover, queens in very weakened colonies, left to work out their own salvation, also showed no ill effects and finally built up respectable colonies.

You may say: "Why should the disease continue so long even if the food is the cause?" Well, it may be that the flying bees continued to bring in sufficient food for actual consumption, that is, enough to keep the disease going, for weather conditions were such that there was more or less flying about every day. Take into consideration that in Oregon moist weather prevails especially in apple-blossom time, and rarely do we have really good weather then. Notwithstanding this, our bees seem to adapt themselves to the climate, flying well during light rains.

Again you might ask why, if these conditions are normal, was the spring of 1916 different in this respect. I reply that we had long-continued rains and no let-up for some weeks, and this condition may have been responsible.

Again, some may say weather conditions with them were not excessively moist, but it is possible that there were conditions present to bring about a watery or diluted flow that soured or fermented. I could discover nothing wrong with it.

Regardless of the stagnant-air theory, I find that while the bees in my own yard were apparently the first stricken, this may be explained by the fact that I may have noticed it before my neighbors did. My own yard is well protected and not at all exposed but another apiary less than half a mile from mine is located on a knoll and is virtually windswept and here the trouble was fully as severe as in my own yard. This apiary is owned by my associate, a careful, painstaking, enthusiastic beekeeper, and since the early diagnosis was given as paralysis, he tried the sulphur cure. Needless to say it didn't work. Queens were changed from

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weak colonies and given to healthy blacks and no sign of the distressful disease appeared afterward. This proved to us that the queens were not to blame.

All things considered, I believe the whole trouble points to the theory of infected food, as the great losses were as rapid as poisoning, and so severe was the disease that so far as I could discover, no cure of a single bee was brought about after the bee once was stricken.

The remedy I suggest is feeding—not medicated dope, but a good generous feeding of thick syrup. Just how the bees may be fed and how the young and hatching bees may be made to eat this syrup in preference to the thin nectar, will depend somewhat on man's ingenuity.

In closing I want to add that the spring of 1917 started much later than usual and cold rains were frequent during apple-blossoming time—so much so that we all looked for a reappearance of the trouble, but it did not materialize.

Portland, Ore.

E. J. LADD.

A LOT OF HONEY FROM A LITTLE LOT

For 17 years I have been keeping bees and taking Gleanings. Last fall I wintered 44 eight-frame colonies in my cellar. On Apr. 10, I moved them out and found all, except a queenless one, alive and in fine condition. Tho all the beekeepers around here use eight-frame hives, I have been thinking for years that these hives are too small. So last

spring, I bought all 10-frame hives, and fitted my frames with full sheets of foundation. The first of May I transferred 20 colonies to the new hives.

This season I received 4,068 sections of honey from the 43 colonies, spring count. All but 200 of these sections were white clover and all sold at 20 cents each. One colony alone produced 324 sections of No. 1 honey. In addition to this surplus, I also obtained an increase of 48 colonies. A light fall flow gave us no surplus, but left a nice lot of stores in the brood-frames. Next year I intend to run half for extracted and half for comb honey.

As I have only a small lot, with my house in front and the railroad at the back, it is necessary to place my hives very close to each other. Over each hive I have a metal-top cover with an inside one which I use for a Porter bee-escape board. Since using these hives, I will not buy any other kind. Several of the 10-frame colonies did not swarm at all, and those that did swarmed only once.

The bees for 25 miles around me are all blacks, so every year I buy 10 new queens, hoping some day to run those German bees out, but up to the present I have never got any further than putting a band now and then on a few of the bees. An old friend of mine, who has 12 colonies, harvested only about 100 pounds from all 12. He said the reason for his short crop was that my bees took all the honey. I try to tell him what to do and he gives me this old saying: "I kept bees, my boy, before you were born." But in spite of his reluctance to accepting



W. W. Boutilier's back yard apiary that pays big.

FROM THE FIELD OF EXPERIENCE

suggestions, I have this year succeeded in getting his promise to try wintering in the cellar.

During the last three years I have never had a lower average than 100 pounds of white-clover honey per colony, spring count.

Britt, Ia. W. W. BOUTILIER.

HIS FIRST POUND PACKAGES

As the 10-frame standard hive was not large enough to meet our needs, we decided to change to the Jumbo hive. Therefore we sold a number of our hives and bees with them. This left us a little short of bees, and so, deciding to try out the pound package, we sent to Ohio for 50 Jumbo hives and to California for 66 two-pound packages of bees with queens. Of these latter, we kept 50 and let our friends have the rest. These packages were shipped Apr. 21, 1917, and arrived Apr. 24. I was at the station to meet them on their arrival and found them in fine condition. They were given all the syrup they would take, loaded into the auto and given a 35-mile drive across the desert. As soon as the car started they formed clusters and arrived home all O. K.

We put them into the big Jumbo hives without any brood. They were each given two Jumbo frames with full sheets of foundation, one frame with drawn-out comb taken from the extracting supers of the standard hive, and a fourth frame which we made into a division-board by pasting over it a piece of paper reaching to the top, ends and bottom of the hive. Over the frames and under the inner cover we placed a sheet of paper, thus providing them with a snug little apartment at the side of the hive. As the weather was cold and stormy we fed about 75 pounds of sugar, using those cheap fiber plates about the size of a saucer. We found we could feed very fast by putting a plate on the bottom of each hive with the edge just under the division-board, which arrangement kept the bees from getting in the way, so that, without uncovering or exposing the bees to cold, we could slip the inner cover back a few inches, pour in the syrup, and replace the cover before the bees knew it.

On Apr. 24, the dandelions and apricots were in bloom; and by May 13 this first flow was strongly reinforced by that of the strawberries and fruit trees. So that from the arrival of the bees until the main honey-flow there was always a little honey in the fields, altho at least two-thirds of the time bad weather prevented the bees from gathering. At such times we fed syrup.

We soon learned that queen-breeders get blamed for weather conditions and the way bees act, for some of our friends who received a part of the bees, blamed me and the breeder for poor shipment because some

of the bees were dwindling and others would not leave their cages at all. We explained to them and showed them how to shake the bees from the cages, but nothing seemed to change their minds in the slightest until the main honey-flow was in full blast. Then they appeared to be satisfied.

It was not all joy with us, for we lost some queens and some of the queens were mismated. The first warm day we had, we made a hasty examination and, finding four queens gone, we wrote the breeder. There were no "ifs" and "ands" about it. By return mail we received the four queens. Later when fine weather came, we found more queens missing, but as it was getting late in the season and we knew the breeder was rushed to the limit, we united the queenless bees, thus leaving us 42 colonies out of the 50 packages.

On July 10 we extracted 100 gallons; July 22, 160 gallons; Aug. 8, 90 gallons; and Oct. 1, 130 gallons. That is, from the original 50 packages, we obtained 6,660 pounds of extracted honey besides 75 pounds of No. 1 wax, and one queen for which I refused \$35.

We are planning next spring to purchase pound packages again, as we believe this the best investment we ever made.

Parowan, Utah. M. L. SKOUGARD.

CONDITIONS IN CALIFORNIA

Last spring (1917) Dr. Phillips advised beekeepers to "spread out, get big colonies, in order to get big crops." Some of our neighbors did so, with the result of having a lot of star boarders to feed or allow to starve. During the six seasons I have been studying conditions in this location, two of them were quite similar to the winter of 1916-17, and it took sugar by the ton to get the bees thru those lean years. So, like the burned child that dreads the fire, I declined to "spread," but proceeded to do just the reverse by shaking bees onto foundation, and pinching queens and so on with the results of being able to bring 350 of the 500 through to date (Dec. 28.)

Now we are confronted by another problem that keeps us guessing. The present December has been as warm and sunny as May, and bees have been hustling in pollen at a great rate, which means breeding out of season. If spring comes early and is warm; the conditions are ideal; but if late and cold,—let us change the subject.

One of the local papers has an advertisement for a winter in the "lost, strayed, or stolen" column. It is a common saying that "no one can say what California will do next." To a Yankee it does seem strange to see rats build nests in trees, and squirrels dig holes in the ground and share their burrows with owls.

S. A. NIVER.

Greenfield, Cal., Dec. 28, 1917.

DELIGHTED to know Prof. Jager is safe back on this side the water, and I hope he has lost none of his enthusiasm.

STRAY STRAWS

Dr. C. C. Miller

J. L. Byer discusses interestingly, p. 37. packing front, back, top and sides, but not a word about bottom, in which he does not differ from others. But doesn't Dr. Phillips claim something like equal importance for packing under the hive? How about it?

Beeswax painted on foundation prevents sagging, but "beeswax is expensive; and if we can prevent sagging by any scheme of wiring we are that much ahead," p. 12. Vertical wiring will do the trick. I had thousands of frames wired vertically with never a sag. I like foundation-splints still better.

J. E. Crane, you say, p. 27, that you did not say "I don't worry if my bees have sugar and pollen." You said, p. 771, "and when we have a supply of pollen we do not worry." I understand you to convey the idea that when you supplied any lack of honey with sugar, you didn't worry if pollen was present. My question is whether the necessary mineral elements in honey and not in sugar, are contained in pollen. If not, then will there not be a loss in vigor of bees if even part sugar is used? Say—are you and ye editor in a conspiracy to make me tear my hair and turn black in the face by admitting that even "possibly" honey is no better than sugar for man or bee?

S. H. S. is advised, p. 40, to use the Alexander treatment for European foul brood, making the colony queenless for 20 days and then giving a ripe cell. That makes a break of about 30 days in brood-rearing, in which time there will be quite a slump in numbers. Is there any good reason why he should not cut out 20 of those 30 days by using the Alexander-Miller treatment? That requires, after seeing that the colony is strengthened if not already strong, that it shall be made queenless for 10 days, at the end of which time the old queen may be allowed to resume laying if she is good and the case mild, or a new laying queen may be given if the case is bad. Or a ripe cell, protected, may be given at the same time the old queen is removed. Is anything gained by having the cessation of egg-laying three times as long?

Mrs. Allen having said, December, p. 928. that every spring she had combs so moldy that the bees destroyed them rather than to repair them, P. C. Chadwick says, January, p. 36, that altho he has plenty of moldy combs he has never known the bees to de-

stroy them, adding, "I have never seen the combs too moldy for a new swarm to tackle and clean up in short order." Possibly the difference results from

Tennessee being further north than California. I'm still further north than Mrs. Allen, and have had many a case in which the combs became so bad that the bees considered them beyond repair and tore them down. Altho Mr. Chadwick may safely hive a swarm on his moldy combs, very likely Mrs. Allen or I could furnish him a set of combs so bad that if he should hive a swarm upon them the bees would promptly decamp in a body.

Stancy Puerden, I agree with your view, p. 30, that honey is better than sugar for our soldiers, altho that exasperating editor may say it's "possibly" no better (and I think the best is none too good for them), and I'm glad to know of the individual bottles for the soldiers; but I wonder whether bottles are the best containers. Early in the war, in Europe, they were sending honey to the soldiers in tubes. Instead of the trouble of melting the candied honey in bottles, the skin of the tube could be peeled back.

By the way, I may as well tell you that I think a good deal of you; but when I talk to my folks about you I don't know what to call you. I could get along with Stancy all right; but I'm trying to learn politeness, and when I call you "Mrs." I don't know whether to say Mrs. Pew'er-den, Pew'er'den, Pew'er-den', Pure'den or what.

Do you know that clover goes to sleep at night? J. J. Kettle says in British Bee Journal, p. 328, that the leaves close up, the two outside ones closing with their upper surfaces face to face, while the leading, or terminal, leaflet turns over the other two and forms a little span roof with the under surface up to the heavens. [We have never seen it.—Editor.]

A New Yorker wants a dispute settled as to whether the wax is swallowed when comb honey is eaten. I think it's generally this way: When it is eaten alone, the wax is left in the mouth and rejected; but when it is eaten with biscuit or some other food, then the wax is swallowed with the other food. Some have objected to swallowing the wax because it is indigestible—utterly so. But such people fail to understand that, for the sake of good health, it is of great importance that a goodly portion of food be of the indigestible sort so as to facilitate the movement of the contents of the colon. If a man should eat only such food as is perfectly digestible, he would not be long for this world.

EVERY apiary should be an experiment station. That which works well in one apiary or section may not in another. Paul's admonition holds good in beekeeping: "Prove all things, hold fast that which is good."

The past season, with all its drawbacks to breeders of bees and queens, has some things to its credit, for in the recital of their troubles, we honey producers have learned more of their business than we had ever dreamed.

On page 944, December, I mentioned seeing the combs of a colony of bees that I thought had wintered in the open air on the branch of a tree. Mr. Byard informs me that they wintered under a platform. Some small branches of bushes were mingled with the combs and this doubtless led to my wrong inference. The occurrence, however, remains an exceedingly interesting fact.

J. W. Tinsley, page 12, favors painting foundation with wax instead of wiring. O. O. Poppleton used to treat his in this way, but I noticed that, altho it seemed to help somewhat, many of his combs were badly sagged and out of shape. At present prices for wax I believe it would be more expensive than wiring.

I approve most heartily of Dr. Miller's view that wires are most helpful near the top of the frame. (See page 29.)

That is a most sensible article by Harry Hewett, on the "Other Side to Florida Beekeeping." One of the difficult things to do is to give satisfactory answers to inquiries in regard to good locations. I have several inquiries in regard to good locations here in New England, and I confess I do not know enough to give answers that will be satisfactory. Sometimes a few miles will make all the difference in the world.

There is no mistake as to the value of the Editor's advice, page 26, that those who make their own supplies should have a factory outfit for a sample. A bee inspector sees the folly of working without one.

We were helped out on labor the past season by Boy Scouts, and found them most willing and helpful. One or two to wait on an experienced man does very well.

J. L. Byer says, page 37, that he sold buckwheat honey in tins for 13½ cents and the

SIFTINGS

J. E. Crane

same grade of honey is now worth two cents more, and inquires, "Where is the limit?" Forty years ago the current price for "strained honey" was 20

cents a pound, and in those days I sold extracted honey by the barrel at that price. It would not surprise me if 20 cents was the ruling price for white honey next autumn.

Wesley Foster informs us that next season will see the passing of Colorado as a comb-honey producing state, page 39. Doubtless he is right, and what is true of Colorado is, or will be, true of a large part of the country. But it will be well for comb-honey producers to remember that there are many persons who greatly prefer comb honey and will prefer it to extracted at much higher prices. [Probably all true, but should people in these war times be buying luxurious honey, and should we advise beekeepers to produce more such?—Editor.]

Stephen T. Byington inquires on page 949 (December) as to the use of forest leaves for packing bees for winter. There is nothing better, if the leaves are well dried and in a burlap bag. The only trouble with fresh leaves is that they are apt to be a little stiff and not lie down compactly. But they improve with age, breaking up more or less and becoming very warm. If we wish for some woods mold in winter, we go to some hollow where the wind has drifted the leaves, scrape off the leaves and help ourselves to the earth that a month of zero weather has failed to freeze. This fact shows the protective value of leaves. [many beekeepers fail to pack with leaves who might well do so.—Editor.]

I am much interested in the capping-melter described and illustrated on page 936, December by our friend J. L. Byer. I tried one out some years ago, but, like Byer, I found it a "sticky and mussy job" to separate the wax from the honey. This simple device would seem to obviate that trouble. By the way, the printer appears to have got the names of the spouts interchanged in the illustration as the spout for wax is labeled honey and the spout for honey is labeled wax. [The engraver or Mr. Byer or the Editor or somebody did make just that error.—Editor.]

Having a number of tin-bee feeders to mend while feeding our bees the past autumn and no acid or rosin at hand, I thought I would try beeswax in place of them and was surprised to find that it worked as well or better than the rosin.

WE are told "Everything comes to him who waits." Apparently this is coming true in my case. For months I have been planning a trip to New York city, where I was going to visit every food specialist, dietitian, model kitchen and cooking school that could be found. For the present, at least, the trip has had to be given up; and while it is obvious the interesting places are not going to come to me, it looks as if most of the interesting people on my long list were coming to The Home of The Honeybees sooner or later. Three have already done so, and I imagine they are willing to grant me longer interviews here in Medina than if I should beard them in their New York dens. At least, the lions so far have been remarkably good-natured and affable.

The latest one to visit us was C. Houston Goudiss, editor and publisher of the Forecast Magazine, and founder of the School of Modern Cookery. The latter is free to every one, and the former is a valuable food magazine. Dr. Goudiss is also lecturing and working for the Food Administration. I want to mention two or three points he made. The inspiration of meeting a man so enthusiastic, so earnest, so in love with his work cannot be passed on at second hand.

One reason Dr. Goudiss attaches so much importance to the study of food values is because there are children right in our own cities who are already plainly showing the effects of malnutrition. While this condition is caused primarily by the high cost of food, it is due even more to the ignorance of the mothers as to food values. Do you remember reading last winter of the food riots in New York city? They were caused largely by the scarcity and high prices of meat, potatoes, onions and cabbage. The poor women, many of them foreign born, knew how to set a good table when the above foods were plentiful, but did not know that there are available substitutes, equal in food value, for all these foods.

Another topic on which Dr. Goudiss touched is the prejudice against oleomargarine or butterine. He said good oleomargarine is a far better food than poor butter. This is a conclusion reached by the Puerden family also. Recently I have kept oleomargarine in the house for baking purposes, and at times the only butter we could get was so poor that we preferred the oleomargarine on the table. It is true that oleomargarine is lacking in vitamins, those mysterious little bodies considered essential to growth, and they are present in butter. For that reason butter is considered better for children. However, Dr. Goudiss pointed out that there is no lack of vitamins in a diet where there is plenty of milk, fresh fruits and vegetables

OUR FOOD PAGE

Stancy Puerden

and eggs in season. He also said he had visited practically all the large oleomargarine factories and found them scrupulously clean and sanitary. They

are all under government inspection. Uncle Sam even requires the factories to have the air in the mixing-rooms changed once in so many minutes. I wish we could be sure all the butter on the market is made under as sanitary conditions.

Now listen, every one, while I tell you the next point. Alfred McCann told me the same thing when he was here in October, and I have been waiting for a fitting time to tell it. There are vitamins in honey. I have been suspecting it for nearly a year back, but could find nothing in print about it. You see vitamins were discovered very recently. Some day I am going to tell you more about them.

Here is a quotation from Dr. Goudiss to which I should like to call the attention of all "sugar drinkers." "If all coffee drinkers would drink their coffee without sugar there would be no sugar shortage." This needs no comment from me. If you read the last issue you know my sentiments about sugar in coffee and honey in coffee.

A New Home Card.

The U. S. Food Administration is shortly to send out a new Home Card to all those who have signed the Food Pledge. The food situation is now found to be far graver than when the preliminary survey of the food supply of the world was made, and the American people will need to sacrifice far more than was at first thought necessary. The new card asks for a porkless Saturday, a wheatless meal each day as well as wheatless Wednesday, a meatless meal each day as well as meatless Tuesday, and a reduction of sugar to a monthly allowance of three pounds per person. This will work no hardship if we put a little study to it. Wheat substitutes are just as nutritious, most dietitians advise less meat than Americans eat, and they all agree that America will become a nation of dyspeptics if we keep on eating sugar at the rate we have been doing.

If you should look out of your window some morning and see a family consisting of a mother, little baby, older children and old grandmother, all emaciated and almost starving, their home destroyed thru no fault of their own, the father taken away from them, the children perhaps barefoot in the snow, what would you do? You would want to share your food with them, of course. That is just what the Food Administration is asking us to do for our unfortunate neighbors in the invaded districts of Belgium and France. And the only way we can do it is by cheerfully using meat and wheat substi-

tutes. Money alone will not help. It is food which can be most easily shipped that is needed. Even England has been put upon a bread ration.

Beans.

The Food Administration is urging us to use beans of all kinds on our meatless days. Navy beans are so high in price that at first there does not seem to be any economy in using them; but according to a table issued by Government experts, if you take into account their value in calories they are still very much cheaper than any kind of meat. And you may safely use all kinds of dried beans and dried peas, properly prepared, as meat substitutes, as, like meat, they are rich in tissue-building foods, or protein. Soy beans are still more like meat in that they are rich in fat as well as protein. They are very much cheaper than navy beans, but it is difficult to find them on the market. Pinto beans, grown in Colorado and New Mexico, are now being used by our army and navy. These should retail from 10 to 12 cents per pound, and contain more nourishment than some of the better-known varieties. If you are interested in trying them, and cannot obtain them from your grocer, write to the Bean Division, U. S. Food Administration, Washington, D. C. It will furnish names of shippers.

Speaking of beans, one of our subscribers of New England descent, at present living in Colorado, writes that her attention was attracted by my baked-bean recipe in the December issue. She is shocked at the short time given for baking the beans. Here is her recipe

BAKED BEANS, OLD BOSTON STYLE.

1 qt. beans	¾ lb. salt pork
3 tablespoons honey	salt to taste

Wash and soak beans over night. place in bean-pot with pork on top and bake 24 hours with a slow fire, filling up with water every two hours.

Do you know that is the first recipe I have published without personally testing? The thought of tumbling out of a warm bed into a zero atmosphere every two hours these winter nights, creeping noiselessly down the back stairs and replenishing the water on those beans is too much for lazy Stacey; but I am perfectly willing to vouch for the recipe. Our correspondent writes they have these baked beans every Saturday night. If the beans are accompanied by Boston brown bread, and if there is a view of some of those magnificent Colorado mountains from the dining-room window, I should love an invitation to supper, wouldn't you? Meanwhile the Puerden family will have to worry along with their counterfeit baked beans. Really, they are not so bad. Notice I specified they should be boiled until tender, not broken, before baking.

Cornmeal (Yit or agin?)

A subscriber writes that he wishes I would go on talking about cornmeal, as he cannot get the ladies of his household to believe

that it is good human food. Come to Medina, Mr. Subscriber. Come to the Puerden home for lunch and I will make you some hoe cakes. Prudence warns me to extend this invitation only to those subscribers whose wives refuse to make hoe cakes and other cornmeal dainties at home. Let me confess something to you, ladies. I have a husband who likes fried foods, old-fashioned yeast buckwheat griddle cakes and popcorn. I dislike frying; don't care for popped corn, and have always thought yeast buckwheat cakes an invention of his Satanic majesty to promote indigestion. Some day I will tell you how I make my oven produce most of my fried foods. I have just ordered some popcorn; and as to buckwheat cakes, I have gracefully yielded the point, just as you are going to do when you bake hoe cakes for your husband. Both buckwheat cakes and hoe cakes are easy ways to solve the problem of wheatless meals.

Permit me to mention one or two ways of using cornmeal before I give recipes. You know there are people who find it hard to deny themselves pie, and yet piecrust takes much wheat flour. Try substituting part cornmeal in your piecrust. It produces a flaky crust, tasting much richer than it really is. If you use one-fourth part cornmeal the flavor will hardly be detected, but you will be sure to receive a compliment for your piecrust. The crust may be made with half cornmeal and is very good, but it is rather difficult to roll out and handle. Also, if you make all your pies "open faced" you save that much more wheat. These are what our English cousins call "tarts." Their "pies" are always of meat.

Here is an easy, quick method of making a crust for a pumpkin pie, or any pie with a semi-solid filling. Grease the pie-pan liberally and sprinkle cornmeal over it. Then put in your pie-filling and bake as usual. It can be cut as any pie, and the Puerden family pronounced it good.

Now that eggs are becoming plentiful I am giving you another recipe for Southern spoon bread which calls for four eggs. This is delicious. Serve it at a meal which is otherwise deficient in protein or tissue-building foods, as it might be called a meat substitute as well as wheat substitute. Eaten with honey it makes a nourishing dessert which children enjoy.

Notice that my new cornmeal muffin recipe calls for no wheat flour.

Wheat Substitute Dishes.

SOUTHERN SPOON BREAD.

¾ cup cornmeal	2 tablespoons butter substitute
2 cups milk	
4 eggs	1 teaspoon salt

Let the milk come to a boil and then pour it slowly over the sifted cornmeal, and salt, stirring until smooth. Put over the fire in a double boiler and cook until it thickens, then add the beaten egg yolks and take from the fire. Fold in the stiffly beaten egg whites; pour in an oiled baking dish and

(Continued on adv'g pages.)

MR. Ernesto Tschudin, Luyaba, Argentina, gives in some recent letters interesting glimpses at sideline beekeeping in our southern sister republic. Mr. Tschudin's chief work consists of the care of several acres of vineyard and orchard, peach, apple, pear, apricot, walnut and even almond trees, all under irrigation and all tilled with an American horse cultivator. Comparing the bees to the other things, Mr. Tschudin considers that the little pets, as he regards them, have given very good returns for the care devoted to them. Sierras de Cordoba, where this fruit and bee farm lies, is a very arid region, with irrigation a necessity—somewhat like southern California. Spring comes, of course, in September and October, and the bees build up at that time on peach and orange bloom. A little later comes the Algarroba (a near relative to the mesquite of Texas), with sometimes a little nectar from alfalfa, grown in only a limited way. Then there is not much else except wild vegetation until fall, coming in March and April, brings in goldenrod and a small white aster. The honey is amber with rather a pronounced aromatic flavor, and the surplus is sent to Buenos Aires in tin. Mr. Tschudin has most of his apiary in long-idea hives. He first tried out two of these, and it happened that during that season he had several weeks of half-sickness, when he found it practically impossible to lift off supers from the tiered-up hives, but had no difficulty at all working with these two. He was so pleased with them that even after becoming well and strong again he decided to use only this type for increase. In spite of these hives being made with two or three narrow boards running the long way of the sides, held together by vertical cleats, they neither split nor warped, tho the temperature ran to 112 degrees, that being the hottest and driest summer known in that section. Mr. Tschudin uses Jumbo frames, 20 or 21 to the hive, and finds a certain amount of shifting of frames necessary for best results.

Here is the keynote for success, in sidelines or main lines, in beekeeping or other work: "What's worth doing at all is worth doing well." Now here comes the season of 1918. We have our chance again, a new spring as yet unmarred by any slipshod work, any procrastination, any half-way doing of things. We can make it the best season we have yet had, perhaps not in honey obtained (that will depend largely on things without our control), but at any rate in personal endeavor.

It seems to me those are the longest long-idea hives I ever saw, page 17, January. I

Beekkeeping as a Side Line

Grace Allen

larger than a shoe box. I wish Mr. Reeder had given us some idea of their cost. It seems to me these hives are well worth trying for many a side-liner, especially women. We hope to have a few ourselves this year.

Other sideliners may be interested in the following on the subject of division-boards, from Mr. L. E. Webb, Morganton, N. C. "Division-boards seem to cause a lot of discussion, some claiming they are useless, others claiming they are O. K. You, I believe, do not use them." (I do not.) "And so far as it applies to 10-frame hives, they are of little use, but you just try eight-frame hives without them, and see what a mess of bum combs you will have on the sides. There is nearly an inch more vacant space in the eight-frame than in the 10-frame hives. But unless people have used both, they are generally not aware of this difference. The 10-frame beekeeper will be against them and the eight-frame for them. I don't use them in my 10-frame Jumbos, and I do use them in my eight-frame hives."

"How is this for a bit of practical patriotism?" writes a beekeeper from Massachusetts. "You know the sugar shortage hit us here in New England very hard indeed. It is weeks since any of the stores have had any at all, and only the forehanded housekeeper has any to serve. While conditions were this way, it became too cold for the bees to gather the goldenrod flow. There was no sugar to be bought for feed. Having some foul brood honey in the crop, I could not feed that back. I happened to mention at the Red Cross in town one day that several of my hives would have to be sacrificed to the sugar shortage. The next day friends got together and collected amongst them enough to carry the bees thru. Several of the contributors I knew only slightly."

And have you made your spring plans? Have you a fairly definite idea of what you are going to do and how you are going to do it? Have you ordered your supplies for next season? How about equalizing stores? How about equalizing brood? Do you know Dr. Miller's rule? Maybe he'll give it again. If you have files of Gleanings for a year or two, look up some good strong articles on "Spring Management." Or hunt it up in A B C and X Y Z of Bee Culture. Better still, do both. There will be still other articles appearing, of course, but you can't read too much, nor too often, nor too early.

GLEANINGS FROM THE NORTH, SOUTH, EAST, AND WEST.

ALTHO the 29th annual meeting of the California State Beekeepers' Association was held nearly three months ago, part of the proceedings are of such importance that the readers of Gleanings living in the northern part of the state should receive a short account thereof. The meeting was held at Sacramento on Nov. 5 and 6, and presided over by B. B. Hogaboom of Elk Grove. The principal topics discussed were those of disease and co-operative marketing. Dr. E. E. Phillips of the Bureau of Entomology gave a lengthy and detailed account of both American and European foul brood. It will be difficult to estimate the great value derived from his talk, for it became apparent that thruout entire northern California there existed much confusion among beekeepers when it came to differentiating between American and European foul brood. Strange as it may seem, even carlot producers had been treating the former for the latter disease, i. e., by placing infected material above excluders and expecting the bees to clean up. In addition, it was found that many beekeepers firmly believed that European ultimately turned into American foul brood, and we owe much to Dr. Phillips in largely dispelling, thru his clear, concise and positive statements, this erroneous notion so generally prevailing among beekeepers. It is easily explained, the writer believes, why this wrong diagnosis in the symptoms of the brood diseases has prevailed. The history of northern California beekeeping teaches us that we have had always to contend with American foul brood, practically every year, in almost every beekeeping district. Several years ago, when we had our epidemic of European, its ravages were quick and widespread, and our attention was drawn almost altogether to this one disease. In its treatment during the past few years we have destroyed but few combs, and have paid but little attention to the symptoms of American during the devastation wrought by European. It must become evident, then, that the germs of American foul brood have had an excellent opportunity to spread. Lately the epidemical character of European has considerably subsided and those beekeepers that are careful observers have noticed that the old, reliable, hard-to-eradicate, American type is again with them. To further complicate the matter, not a few cases have come to light where a bacteriological examination showed that both American and European existed not only in the same hive but also upon the same comb. There is much need for an educational campaign in the matter of brood disease diagnosis and treatment, and this subject will receive the attention of the northern California readers of Gleanings in the not distant future. Owing large-

NORTHERN CALIFORNIA

Reported by M. C. Richter

ly to Dr. Phillips' talk, many of our beekeepers hereafter

will treat doubtful cases as if they were American, and, likewise, those cases that do not respond readily to European treatment will also be handled as if American.

Colonel Harris Weinstock of the State Market Commission delivered an address on "The Value of Co-operative Marketing." As a direct result of Colonel Weinstock's able talk a resolution was passed which in substance read that it was the sense of the convention that the beekeepers of California should be organized into an effective marketing association and that the secretary of the association be authorized to appoint a promotion committee which should meet at an early date in Los Angeles to form and perfect an organization campaign. (This committee is making excellent progress and hopes to have its plan of organization perfected on Jan. 12.)

The following officers were elected for the ensuing year: President, F. A. Alexander, of Ontario (Mr. Alexander is the son of the late E. W. Alexander, of Delanson, N. Y.); secretary and treasurer, M. C. Richter, of Modesto; executive committee, James F. Kerr, of Ramona, Chas. F. M. Stone, of Lamanda Park, J. C. McCubbin, of Reedley, and the president and secretary ex-officio.

The U. S. Department of Agriculture, thru its States Relations Service, sent us early in December a special field agent in beekeeping. Dr. Phillips, who has supervision over the various field agents in beekeeping thruout the country, fortunately selected E. F. Atwater of Meridian, Ida., for California field agent. Mr. Atwater is a large producer in his home state, a practical beekeeper, and is well known thruout the country generally. Mr. Atwater will spend two months of the year as agent in Arizona and New Mexico, but he is scheduled to spend the entire spring and summer in California, dividing his time between the north and the south. California is a big state and our beekeepers are so widely scattered that it will be impossible for him to see every one of us. He is at your service, however, and will answer to the best of his ability any questions you see fit to ask him. Let us suppose, for instance, that you and your neighboring beekeepers have a certain problem that baffles you and, as is quite frequently the case, have no club that can assist you in your troubles. You are then at liberty to write to your special agent, explaining to him your particular situation. It is almost certain that he will come and see you and help you solve your difficulty. A letter directed to Special Field Agent in Beekeeping, care of Division of Agricultural Extension,

College of Agriculture, Berkeley, Calif., will reach him. A special field agent is constantly visiting beekeepers and is learning new "kinks" and "wrinkles." He is ever increasing his knowledge regarding improved methods of manipulation, and in many other ways familiarizing himself with the more up-to-date phases of beekeeping.

The outlook for next season is anything but satisfactory. During the past 49 years we have never experienced such a dry sea-

son. At the present writing (Jan. 10) our section of the state has not averaged an inch and a half of rain for the season, and to make matters worse, a cold north wind has been blowing for the past two days, which will mean a considerable reduction in the early honey plants. Fortunately, most colonies went into winter with ample stores but, unless we have rain in the very near future, a large portion of our contemplated spring increase will never materialize. Foothill beekeeping will suffer especially.



WE had a fine meeting of California beekeepers

SOUTHERN CALIFORNIA

Reported by L. L. Andrews

ers in Los Angeles, Dec. 28. About 175 people were present. F. A. Alexander, president of the California State Beekeepers' Association, gave a good talk on buying and selling collectively. E. F. Atwater, special field agent for California, New Mexico and Arizona, told us what Uncle Sam hopes to do for the beekeepers of California. Harris Weinstock, state market director, told of selling methods as carried on by California producers of walnuts, almonds, raisins, prunes and other products. The problems of these people are much the same as those of the honey-producer. The formation of local organizations is perhaps the most practical method at the present time.

Our eastern friends often do not consider the location, general conditions nor sources from which the honey comes in California. In a state which is over 800 miles from north to south and over 300 miles from east to west, there is sure to be a great variation in the climate and flora. One man has his apiary in the great Imperial valley 200 feet below sea level, where rain is scarcely known and the Colorado river furnishes the water supply. Another, with an apiary in the Owens river valley at an elevation of 5,000 feet, has many different conditions to meet. Both depend largely upon alfalfa for their surplus honey and upon irrigation for moisture. In the Imperial valley it is necessary to have a brush-covered shed over all apiaries, and the weather is so hot that it is not considered profitable to produce comb honey. Often it is too hot to extract unless combs are taken into the house in the cool of the morning. In the Owens valley the conditions are the reverse, being such that they cannot produce extracted honey successfully. The nights are cold and the days often so cool that the honey is quite thick and the extractor can not throw it from the combs without tearing them to pieces. In the sage and orange districts the bulk of the crop is sometimes harvested by the first week in May, while there is a vast territory thruout the state where the honey flow

scarcely begins before the middle of June.

Many apiaries

are so situated that the bees gather honey at elevations from a few hundred to thousands of feet, over which the blooming period is sure to vary considerably. Some ranges produce a very fast flow of nectar, while others give honey very slowly. Localities such as the sage and orange districts at times produce honey almost as clear as water, while there are places where a good crop is often harvested so dark that it is called "black-strap" or "bug juice." A banner season in southern California has occasionally produced more than 300 pounds per colony in large apiaries. On the other hand I have seen apiaries of a few colonies in Humboldt county (where our old beekeeper friend H. E. Wilder now resides) which were able to gather only a very little surplus honey—perhaps enough for family use, from five or six colonies.

In looking thru some hives a few days ago, (Dec. 31) I found several colonies that had one, two and even three frames with sealed brood in patches as large as your hand. All colonies with good queens had eggs and larvae. The extremely warm, sun-shiny winter has caused a very heavy consumption of stores. With brood-rearing starting so early, it will be well to look carefully to all light hives and see that they have enough honey to last until spring. There has been very little rain this season; hills and pastures are dry.

A company that operates very largely thruout Utah and Idaho has shipped a carload (300 colonies) of bees to Riverside and intends running there largely for pound packages and early queens for their northern yards. Early queens and the shipping of combless bees is becoming more and more an important industry in California. Many times the heavy winter loss thruout the northern states can be made good in this way and a crop of honey produced, sufficient to pay all expenses and leave a good profit. Some pound packages received in Idaho as

late as June 15 produced 60 pounds of surplus extracted honey the past season.

A large producer, who moved several hundred colonies of bees from the Imperial Valley to the lower Palo Verde Valley by train and Ford with much work and over very bad roads, reports the results not as good as with those left in the original locality. How often many of us think some other fellow has much the best chances when we can do as well right where we are. This question of locality is all right, but it is very much as a beekeeper told me a few days ago. One of his neighbors said, "If

I had your locations I could make big crops, too." Now this man told me he would gladly trade locations any time with this same beekeeper. Be sure it is not yourself instead of the location that is the weak point.

January is here and no rain of any consequence over the southern part of California this season. Hills and pastures are dry, with little or no grass. Old-timers say some of our best honey seasons have been those years when all of the rain, practically, came after New Year's. We will keep a cheerful heart and hope it will prove so in 1918.



THE beekeepers of Henderson county have recently perfected a county beekeepers' association. Those who attended the first meeting from out of the county were W. E. Jackson, of the State Entomologist's office; T. A. Bowden and Campbell, of Palestine, inspector and deputy of Anderson county. The presence of foul brood has not been determined in Henderson county, but the beekeepers have taken wise steps to prevent the introduction of the disease into their county. In addition to the protective quarantine the inauguration of the Inspection Service tends to elimination of box hives, a menace to the industry. Where the inspection work has been introduced of late there has been a very decided uplift in the beekeeping industry in the county.

There has recently been encountered in one of the counties where inspection service was contemplated the old-time spirit. It is a relief to say that this spirit is readily disappearing in this state, and it is to be hoped that the day is not far distant when it will disappear entirely. We have in mind the attitude of some who are hostile to organization, co-operation and community uplift. Such people take the attitude that they cannot afford to help those about them, feeling that by so doing they will bring more honey into the market, thereby lowering the price of honey, and perhaps flooding the market. Such a view is indeed very narrow, and fortunately it cannot persist long today. It was the popular view of five years ago when a trifle excessive local production meant disaster.

The time is at hand for each beekeeper to be considering spring activities in the apary. Of course, the larger beekeepers have already made their plans but too many have not yet thought of their bees. Those who did not give their bees attention last fall will not have to worry now about spring management. But even with ordinary attention, there will be some loss of bees this year.

IN TEXAS

F. B. Paddock, State Entomologist

Every owner should be anxious to learn how his bees have

come thru the winter. Accordingly, as soon as weather conditions will permit each colony should be carefully examined. All hives where the bees have died should be taken care of and all combs should be protected from future wax worm attack. Where stores are light feed should be given. There are very few who will have honey available for spring feeding. In nearly every case, sugar must be used. Under present conditions sugar is not generally available in sufficient quantities except thru the Texas Honey Producers' Association. It is indeed fortunate that the efforts of the association have been able to secure for the beekeepers sugar for feeding purposes. Wherever bees have survived the winter they should be given all help possible. With the heavy losses suffered last year over such a wide area, bees will command an excellent price this season. So, too, honey prices are expected to rule strong.

The adverse climate conditions continue over most of the state. Only local rains have occurred, and hardly enough to settle the dust. A long period of heavy rain is necessary to make up the great moisture deficiency existing everywhere. With us, the total rainfall of 1917 was 15.28 whereas the normal for this locality is 37.55 inches. And this deficiency is in addition to a 1916 deficiency. Unusually cold weather prevailed thruout December in the form of sudden and decided "northerners" with much high wind. In view of these continued adverse conditions it is necessary to take another inventory to see where we stand in the face of another season. In the extreme southern section the honey-producing weeds did not come up last fall, but the bulk of honey in this section is produced from trees and shrubs which are as yet only little affected. Prospects in this section remain very uncertain as much depends on good rains early in the season and no late freezes. Along the Gulf Coast conditions and prospects are anything

but cheerful. Fall rains are necessary to the fall germination of the horsemint, the chief source of surplus honey. No horsemint seed was produced in this section last year. With good spring rains mesquite will yield well. Thruout the southern section conditions and prospects for honey plants are equally as bad. If good rains should occur soon the shrubs would yield well. A continued drouth over this area would almost mean disaster. In central Texas apparently all of the native honey plants are dead, as no seed was produced this season. Much rain will be needed in this section. In East Texas conditions are about 75 per cent normal. This section has had a few rains and much of the honey is produced in lowlands which have not suffered from drouth. In North Texas the conditions of the honey plants is about normal but rain is needed during the spring to insure a surplus of honey. In the extreme southern section the bees now are in good condition. No feeding has been necessary nor is any contemplated. In December pollen was gathered from peach and orange. In the Gulf Coast section feeding is being done extensively in one locality; as high as 25 pounds of sugar has been fed to a colony. In the other localities feeding is not being done. In the southwest section feeding is being carried on extensively in one locality, but in another locality the bees are allowed to die. In another locality feeding is contemplated with those colonies that survive the winter. In central Texas, no feeding has

been done and none is contemplated. There will be very little if any loss of bees in the extreme southern section. More stores than usual were left with the bees last fall to insure against winter loss. In the Gulf Coast section where feeding has been done, the loss will be little but in other localities it will be great. However, over much of this section feeding has not been practiced and the loss will be heavy. With the unfavorable fall conditions, most of the colonies went into the winter with entirely old bees. In east and north Texas there will be very little, if any, loss. In the extreme southern section but few bees are being offered for sale and none have been sold. In the Gulf Coast section many colonies are being offered for sale but they are weak in stores and are not finding many purchasers. In a few cases bees are being given away, to those who will feed. Some are holding to a better price, but are due to be disappointed, for, if they do not feed, the bees will die before they are sold. Thruout the southwest section many bees are being offered for sale, but few are being purchased. In the central section many bees have been offered for sale, but few have been sold. No bees have been offered for sale in east and north Texas.

* * *

The Bell County Beekeepers' Association has recently elected a new officer, a publicity agent. Today, in these stirring times of progress, a publicity agent is an essential part of any organization.



THE month of December just passed has been bitterly

NOTES FROM CANADA

J. L. Byer, Markham, Ont.

cold here in Ontario—the weather man says it was the coldest December since 1871, and he ought to know. At any rate, the December just experienced was cold enough even for us fellows who are always used to a rigorous climate. How will it affect the bees? Really the question is hard to answer and we will postpone the matter till next April.

* * *

We have just tumbled onto a nice easy way to liquify cans of honey, provided you have a furnace in the house. Our furnace, like many others, I presume, has a pit on top with about ten inches of sand to prevent the radiation of the heat into the furnace-room. That sand is always comfortably warm to the touch, but one would not think it would melt a 60-pound can of honey. However, a few weeks ago a 30-pound can was placed on top of this sand and we were agreeably surprised to find the honey perfectly liquefied in three days. Since then a 60-pound can was placed in the same place, and inside of five days the honey was clear. The beauty about the plan is that it is ab-

solutely safe there, no matter how long the honey is left, as

it never gets more than lukewarm. The continuous heat, tho, does the trick, and I have an idea that honey would be improved by leaving it there, especially if none too ripe when it was extracted. At any rate, it looks as tho we should never go back to the hot-water plan so far as liquefying honey for our own use is concerned.

* * *

In the December Gleanings we stated that buckwheat honey was then worth two cts. a pound more than when we sold earlier at 13 and 13½ cts. The same firm we sold to, now quotes buckwheat honey at 17 cts. Watch the prices grow.

* * *

On page 18, January issue, I am made to say, "Miller feeders with square boxes," and it should read "and square boxes," as both types of feeders are used. The square boxes are still used at one yard, as we have them yet in good order. For feeding while the weather is warm they are all right—simply place the box on top of the frames in a super. Fill with syrup and throw a

handful of grass on top to prevent bees from drowning. Cover top of super well. If the top does not fit close enough, put a sugar-sack over first—that's all that is necessary. Don't worry about robbing.

On page 34 Grace Allen mentions the fact that she has no particular love for "crawling" bees, and, as the saying is, "that reminds me." Some years ago at a certain outyard where we had a very small extracting-house, a neighbor woman would be sure to call every time we were extracting. While we are always glad to have people call, yet there are times when folks are really in the way; and extracting in a small place, and having company sitting there for a long time watching operations, is not very profitable and may be annoying. This caller seemed to be very fortunate in not getting stung; and, honestly, it goes without saying that we sometimes wished she was not so fortunate. One day when coming in with a load of honey her presence was missed; and inquiry from the two helpers inside of the building explained matters. They said that "all of a sudden" they noticed a convulsive movement on her part—a look of agony on her face, and a sudden "well, I must be going." She never came back. While we have only this circumstantial evidence, yet we all voted that "crawling" bees had been the cause of her sudden departure. She was game, all right, for she never even hinted at the cause of her speedy withdrawal.

MORAL.—Even "crawling" bees have a mission in life.

Mr. Morley Pettit, having gone south for the winter, has resigned the secretaryship of the O. B. K. A. Mr. P. W. Hodgetts, Parliament Building, Toronto, is now secretary, and all business communications in connection with the association should be addressed to him.

Not exactly right, Dr. Miller, to say that I stated that you use too small a hive; for, frankly, I am not sure of that, page 28. What I tried to say was that, for outdoor wintering, the 8-frame hive was too small unless made very heavy—in fact, practically solid in late September or early October.

Of course what was meant about your not feeding, but giving honey instead, referred to the fact that you fed no sugar syrup but put heavy combs in the hives instead, taking out partly filled ones to make room for the full ones, just as we did last fall when we exchanged over 600 such combs. As for us, we were heartily disgusted before getting thru. You want to carry over two combs of honey for each hive for spring feeding if necessary; and from the fact that we seldom need any for feeding in the spring, even with the 8-frame hives, we are convinced that our hives are heavier in the fall than yours; for with good cellar wintering your bees will not use nearly as much stores as do our outdoor-wintering colonies in this northern country. This is especially true if Mr. Doolittle's figures on this question are anywhere near right. I again repeat that 8-frame hives normally strong in bees, will winter outside in very severe climates provided the hives are about solid with good stores in the fall, but if the 8-frame hives are not made heavy enough, they are decidedly risky for outdoor wintering in our locality—or in Marengo, Ill.,—for that matter.

Mr. M.-A.-O., at great risks I am going to comment very briefly on your last sermon in January Gleanings. Please do not rise to call me a friend till you have read further. It appears there is a "moral" to your tale, so I say "sermon." When the pater read the sermon in question he laughed and laughed, and then laughed again, until he almost had a pain, as they say, and he recalled a case where two men actually acted, when mad, almost as badly as the two "f—s" did, as recorded among the advertising pages of January Gleanings. Then in the evening our 13-year-old lad got to reading the same story out loud; and as he came to some of those hybridized cuss words a certain woman of the house was heard to say, "I wonder that Roots allow such stuff to be printed." Needless to say, "yours truly" is at present the victim of mixed emotions, for, no matter how much one enjoys a good laugh, what is a fellow going to do when he dare not give vent to his feelings openly without getting into trouble with his wife? That's all.



THIS has certainly been an unusually cold winter, to date. The bees had a flight last week, and every colony answered to roll call. There seem to be fewer dead bees in front of the packed hives than the others. The one exception to this is one colony of the two facing west in the quadruple case. Somehow five hives missed having entrance contractors, and this was one of them. Now it may or

THE DIXIE BEE

Grace Allen, Nashville, Tenn.

may not be due to this lack, but this colony has been the only

one of the packed hives that shows as many dead bees as the unpacked.

At the last regular quarterly meeting of the Davidson County Association this subject of wintering was the chief one discussed. And there was the old diversity of opinion. Mr. Adkisson, elected president for

1918, said that the colonies in his few double-walled hives came out spring after spring stronger than those in the single-walled hives, which convinced him of the value of protection. But whether results would ever justify the expense and labor of packing cases, he wasn't prepared to say. Mr. Lee, reelected secretary-treasurer, said that his bees, all in Danzenbaker hives, came out so strong in the spring that if they were any more populous he would have to fight early swarming. He didn't want then any stronger at that time.

This meeting of the county association, by the way, was made particularly encouraging by the presence of the county agent, Edw. Thomae, who volunteered to cooperate in any way he could to help put the organization into a booming position, with every beekeeper in the county on its list. That's what we want; our 1918 aim—every beekeeper in Davidson county a member. The county home demonstration agent was also present, and the two city home demonstration agents of Nashville.

Reverting again to winter packing, which I don't seem able to keep away from (it's like one of those electrical machines, once you take hold of it you can't let it drop), L. E. Webb, of Morgantown, N. C., agrees with our Mr. Lee as to spring results under his own present system. "Mine get strong enough to swarm or be manipulated," he writes, "before our climate will admit, anyway, and last year my colonies were just crowded over the first of April, and I wouldn't have had them stronger for pay."

I have heard J. M. Buchanan of Franklin, Tenn., say that, if his colonies came out in the spring with six more or less bees per hive, they'd swarm before locust bloom. Both Mr. Buchanan and Mr. Lee winter in two stories. Contracted brood nests sounds reasonable for heat conservation, and apparently many successful beekeepers practice that system. Yet here are others who find exactly the opposite method successful. Evidently everybody has to work out his own bees' salvation.

Here are some interesting extracts from a letter from A. B. Anthony of Sterling, Ill.: "Your query was 'to pack or not to pack'. Do neither one nor the other. Take the middle ground. Protect, but do not pack. Put an extra $\frac{3}{4}$ -in. wall, painted white, over your bees without packing, and contract entrances. . . . In putting an extra box over your bees, you will use consideration, and not let the space between be 2 or 3 or 4 inches. Make it $\frac{3}{4}$ in. To make it much more would be something like having, between the plaster and the outside wall of your house, a four-foot space, instead of four inches. . . . My locality is much colder than yours; seldom a winter but what reaches 20 degrees below zero, and I insert in the $\frac{3}{4}$ -in. space corrugated paper board. . . . On the matter of overhead absorbents I would say it depends on whether frost

(more or less) lines the inside of your brood chamber. Whether it does, is a matter of your extremest cold, amount of protection, size of colony and size of entrance. If no frost accumulates, a tight cover will do; otherwise safety comes surest with absorbents. Did frost stay on the inner walls until spring, after once freezing, it would probably not do much harm. But the temperature rises, possibly not to thawing outside, but in the hive it does; and bees are not like fishes and mud turtles, but like man, in that they cannot stand dampness, a condition considerably less retained with tight covers. . . . Go ahead and pack your bees if you choose. You are safe so long as they are not allowed to run short of stores. But protection and not packing is all you need."

C. B. Palmer of Bradshaw, Neb., is of course not a Dixie beekeeper, yet I cannot resist quoting also from a recent letter of his: "The idea of you feeding sugar away down south, and I with honey to spare away up in this cold breezy state! Nothing as far north from our yard as the eye can see to break the wind but a barb wire fence."

THE BEEKEEPERS' CONVENTION

In Washington and London,

In Paris and in Rome,

Are meetings, meetings, meetings,

Like this of ours at home.

There men may meet by hundreds,

Sometimes but three or four,

Tho sometimes one grave man alone

In silence walks the floor.

They talk of kings and nations,

Of war by sea and land

And how this army must go on,

And how this line must stand.

And how to save the people,

And how to bring to birth,

From pain and death, a nobler peace

Upon a nobler earth.

While grave men thus are meeting

In Paris and in Rome,

In Washington and London-town,

We bee folk meet at home.

The nations take no notice;

No fleet shall sail away,

No men shall march or banners fly

Because we meet today.

We talk of swarming problems,

And when the clovers bloom,

And how to give at honey time

Unstinted storing room.

And how bees live thru winter,

And how they meet the spring—

The sun and scent and pollen dust

And fairy blossoming.

Oh, presidents and rulers

And ministers of state

And admirals and generals

Are very grand and great.

We've had our times of wishing

That we were great as these—

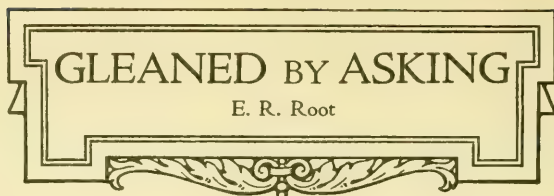
I wonder if they sometimes wish

That they were keeping bees!

L. F. C., Ohio.—The winter has been cold in my locality. It began early in the season, along in November, and has been growing steadily colder, followed by zero weather. What is going to be the effect on the bees, if any? My bees are in double-walled hives, on their summer stands, but they were short of stores, as I could not buy sugar to feed. Should I give cakes of candy now, or should I wait till toward spring? What effect do you think this cold weather is going to have in the beginning of winter?

Answer: Cold, snappy weather at the beginning of winter does not do anything like the damage that it does when the winter starts out warm and ends up by being awfully cold. Under such conditions the bees start breeding, and then when really cold weather sets in, both bees and brood are killed, and the results are often disastrous. We do not fear early cold providing it does not last too long. In any case, zero weather in Ohio is not likely to last more than a week or 10 days, when it will be followed by a warm spell. At such times the bees will move over to fresh stores, and then be ready for another snap should it come. What is hard on bees is too much zero weather for a month or two at a time. If the cluster contracts the bees eat all the stores within reach; and then, if the cold continues, the bees die of starvation because they cannot move to fresh stores on account of the extreme cold. If, however, a colony is strong, or if it is well packed, or both, the bees will survive continuous zero weather. If a colony would starve otherwise, give a cake of candy even in cold weather. Be careful not to break the cluster during extremely cold weather. Candy should be made according to directions given in the text-books, and placed on the top of the frames. Under no circumstances should the brood-nest be disturbed while it is cold. If one happens to have combs of sealed stores, one of these can be laid on top of these in place of the slab of candy, after which packing material is put on top. In the spring, when the first warm day comes that the bees can fly, colonies may be opened up to give stores and to repack. Sugar can be obtained by writing to the Food Administration, Washington, and asking for a permit on the basis of about two pounds of sugar per colony. This permit should be secured now, but not used till the sugar is actually needed. Should the cold weather continue, without any let-up, and the bees are not sufficiently packed, or are too weak, we advise putting them in the cellar, even if it is mid-winter and down to zero. We have done this many times to advantage.

J. B. M., Mississippi.—I noticed that Dr. E. F. Phillips, of the Bureau of Entomology, Washington, advises beekeepers in the South to pack their bees. It is the universal rule around here to winter in



single-walled hives, and we winter successfully. What do you think of such advice?

Answer: We do not know positively but we feel sure that many bees in the

South are weakened by the want of suitable protection. We would have all apiaries in a shielded locality, and we believe it would be an advantage to have some packing—a division-board on each side of the brood-nest with a super containing leaves on top. While the mercury does not drop very low in the southern states, there are many days of chilly weather there. When colonies are properly packed, the brood will be very much better protected. Bees can breed in the southern states nearly every month during the winter, and it is always an advantage to protect the brood. It is our opinion that the advice of the Government representative is right. Try out this advice by having some colonies packed and leaving some unpacked, and report the result.

W. E. O., Colorado.—I moved into this state two or three years ago. I discovered that beekeepers here winter in single-walled hives, notwithstanding the mercury is sometimes below zero. Would it be an advantage to use double-walled hives?

Answer: It probably would; but it is not nearly so necessary to pack in your climate with its dry atmosphere and its bright sunshine as in a locality where the temperature goes down to zero and stays there when the sky is overcast with dull leaden clouds for weeks at a time. The dry atmosphere of Colorado, with its bright sunshine, bringing the temperature up to a little below freezing during the daytime, renders this method of packing less necessary. But windbreaks, where they can be secured, are an advantage; and it is our opinion that at least a moderate amount of packing will do no harm, and probably do a great deal of good in protecting brood in the spring.

F. J. R., Minnesota.—Does deep snow piled around colonies do any harm? If not, is it an advantage? Would you advise shoveling snow around the hives and up against the entrance?

Answer: We always like to see the snow around and on top of the hives. Even if the hives are out of sight, no particular harm is done if the snow is dry and light. As a general thing, the warm breath of the bees will melt the snow around the entrance. As the warm air ascends it melts the snow away from the front of the hive, leaving a gap half an inch or more deep from the top clear down to the entrance. But when the snow melts and runs down into the entrances, and freezes, there is sure to be trouble. But a powerful colony will usually give off enough heat to prevent such freezing. As to the question whether one should pile snow in front of the entrances, we would advise it, if the weather is extremely cold and the

wind is blowing. Usually the wind will scatter snow all around the hives; but we would never pile wet or soggy snow around the entrances. A lot of fluffy snow, or snow that falls in extremely cold weather, will do no harm.

L. O. P., Florida.—I moved into Florida this winter and bought a few colonies of bees; but some red and some black ants seem to be making some trouble. What should I do in such a case?

Answer: We would advise putting the hives up on posts and putting around the posts some smeary and sticky substance like tar. Setting the hive on four legs, each leg in a little dish of water, is often practiced. The ant nuisance in the southern states is serious only in certain localities. In some cases it may be abated by having a flock of chickens. The large red ants that live in the trunks of trees are particularly ferocious to man and beast as well as to bees. In some cases it may be practical to hunt out the nests and destroy them with bisulphide of carbon.

J. C. M., Indiana.—In view of the shortage of sugar would it be possible to use grape sugar, glucose, or Karo? I can buy plenty of Karo, but only a very limited quantity of sugar.

Answer: We tried feeding raw glucose years ago, but we could not get the bees to take it. Bees will eat commercial grape sugar, but it is very apt to cause dysentery in the spring. It is not a good winter food. We should be afraid of Karo because it consists of a large percentage of glucose as compared with cane sugar. It might work all right, however, in preventing starvation in the spring. We would advise trying it. The glucose in Karo may be of a superior quality—it probably is. The presence of the cane sugar would probably insure the bees taking it down into the hive.

J. E. H., Michigan.—Some three or four years ago you told how you put four and five frame colonies in the cellar along in January, and built them up to 10-frame colonies by April. How did you do this?

Answer: In order to make bees breed in the cellar the conditions must be just right. The temperature should be somewhere about 40 or 45 degrees, and the ventilation nearly perfect. During the latter part of January cakes of hard candy, if set on top of the clusters, may be given. The bees will appropriate this sweet very slowly, and start breeding providing the cellar temperature is not too low. Contrary to the general belief, young bees do not necessarily need a flight; but, if cellar conditions are bad, or if the stores are poor in quality, there will be dysentery and the bees will die.

The experiment of breeding in the cellar is risky, unless conditions are good. Moreover, bees won't breed when sealed combs or stores are given.

Making bees breed in the cellar is a nice operation and we would not advise the average beginner to attempt it except on a few colonies; and then if there should be flight days out doors, those colonies should be given a

flight and set back again after it has turned cool.

F. A. B., New York.—My bees in the cellar are flying out and dying on the floor. They keep coming out, and there is now about an inch of dead bees on the floor. Is there anything I can do to stop it?

Answer: Your cellar is probably too warm, with insufficient ventilation. The remedy for bees flying out is plenty of fresh air, and a lowering of the temperature down to 45 or 50. If the cellar is too cold, running down to 38 or 39 or lower, bees in their efforts to keep warm become uneasy and fly out on the cellar floor, and, of course, die. With plenty of fresh air the temperature may go up as high as 60; but it is advisable to have it between 45 and 50—fresh air, either continuously or given at night. All daylight should be shut out—keep it dark.

Avoid, as much as possible, disturbing the bees in the cellar. If they begin to show signs of dysentery toward spring, set the soiled hives out during the first warm day when bees can fly, and set them back again after they have had their flight.

W. C. J., Idaho.—What is the reason that sometimes bees in single-walled hives in an exposed location winter better than other bees in double-walled hives in a protected location?

Answer: This is hard to answer. Lack of protection and exposure in exceptional cases of successful wintering do not prove that such conditions are good for wintering. A man may drink whisky all his life, and yet live to be 80 years old; but that does not prove that whisky promotes health and longevity. It is the exception that proves the rule. The colonies in single-walled hives in an exposed location may have been made up largely of young bees on good stores, while those in the double-walled hives in the protected location may have been made up of old bees on stores of inferior quality. That being the case, it can be very easily explained why the first-mentioned bees came thru in better condition.

J. M. C., Alabama.—I recently moved into this state. I understand that there is no wintering problem in the South. Is this so?

Answer: Indeed there is a wintering problem in the South. There is great danger of starvation and of robbing. When the bees can fly out almost every day they are inclined to breed. Breeding causes bees to go for water and pollen. Many are lost on these trips, with the result that the colony gradually dwindles. Sometimes the hatching bees just about make up for the lost bees going to the field to get pollen and water. In any case, stores are used very rapidly—much more so than in the North. A good colony in the Southern states requires about twice as much honey or syrup as a colony in the North. It is, therefore, advisable that the owner of the bees look into his hives every now and then to see if the bees are in danger of starvation or are dwindling down to a small cluster.

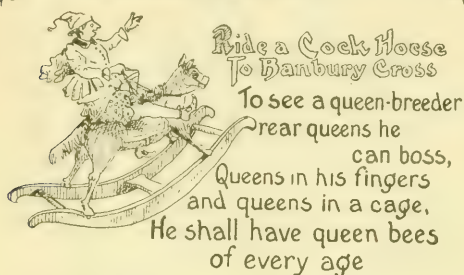
HEADS OF GRAIN

FROM

DIFFERENT FIELDS

MotherBee NURSERY RHYMES

By MGP (Mother Goose Plagiarized)



*Diddle Diddle Dumpling, My son John
Went to the Bee-yard with his gloves on,
Best coat off and bee-veil on,
Diddle Diddle Dumpling, My son John,*

How to Winter Bees by Burying. My method of wintering is to bury my bees.

On Nov. 15, 1913, I buried 14 hives. After spending the winter in Scotland I returned and about Apr. 10 took out my bees and found all in good condition, one hive even swarming as early as May 24. In general I have had fewer dead bees from my buried colonies than from those wintered in the cellar.

In preparing for winter, I make a stand five inches high, 44 inches wide and 28 feet long. This is made of three boards. The outside ones are 10 inches wide and the center one is 12 inches wide. Under the boards and at right angles to them are placed blocks, about three feet apart, so that the weight of the hives will not bend down the boards. Having arranged the stand, the hive bottoms are removed and the hives placed on the stand in two rows facing each other. All the entrances are at the center of the 12-inch plank, and the opposite ends of the hives are at the outer edges of the two 10-inch planks. At the inner end of the two rows of four hives each, is placed a perpendicular air pipe, 4 ft. long and 3 ins. in diameter, thus, connecting the air space with the outer air. Next two rows of eight hives each are placed in the same way and

then another 4-foot airpipe. Two more rows of four hives each fill the stand. The whole is then covered with hay or straw and eight inches of ground on top. The two pipes mentioned give plenty of ventilation for the 32 colonies. A high and dry location should be chosen so there will be no danger of water getting under the hives in the spring.

This year I have 67 colonies which I buried Nov. 23. One stand has 32 hives and the other 35. In December the snow was about two feet deep around the stands.

Winchester, Ont.

N. SUMMERS.

A Spraying Solution Not Fatal.

Hark ye, all who have suffered from the inconsiderate spraying by city or town officials; all ye who have lost bees and honey, yea, who have lost even hopes of future share in the good things of the earth going to waste in the flowers around about because of the bullheadedness of public servants who learn not, care not and shoulder their respective ways thru matters over delicate for their comprehension. All ye, read the following from a public official of quite another kind, and take hope again. Also, show it to your own officials, first discretely cutting off this preface which is intended for your eyes alone, and the reading of which by said officials might cause a moral obfuscation and strabismus and various other mental and physical ills with sonorous-sounding names and shorter meanings, sometimes compressed into one curt phrase—"sheer cussedness."

Optimistic tho the letter be, and worthy of all praise from its spirit of helpful co-operation, the last word on safety hasn't been spoken yet, as there is still room for further perfection in the mixture, or so I am told. But it surely does help, and I hope will encourage other sprayers to experiment further in their turn, until a perfect spray in effect and safety has been found.

Here is the letter, received by me from Wm. H. Colton, forest commissioner of the beautiful city of Newton, Mass.:

"Dear Mr. True:—I was very glad to hear from you again regarding the possibility of keeping honey-bees without danger of losing them thru the spraying of trees with arsenate of lead.

"I am pleased to report that after two years' experimenting with the solution which we have added to our arsenate of lead spraying material, we feel pretty well satisfied the effect on honey-bees in that locality has not been detrimental. I have not heard from any of the beekeepers in Waban as yet regarding the results of our 1917 spraying but have concluded that 'no news is good news,' and that there were no fatalities this year from our spraying. Last year I kept in pretty close touch with them and in spraying with this solution mentioned they all reported favorably regarding it. I am planning to use the same solution the coming year and think that you will be safe in trying to

HEADS OF GRAIN FROM DIFFERENT FIELDS

keep bees again. I certainly hope that if you do start again, you will have success and I assure you that I am ready to do all I can to help you and at the same time perform the duties which are a necessary adjunct to my office."

All ye beekeepers, take notice.

JOHN PRESTON TRUE.

Boston, Mass.

[Can't you tell us what the solution is? Or is that a secret formula?—Editor.]

An Exhibit That Was a Great Success.

October 18 to 23, 1917, Fort Smith, Arkansas, celebrated its 100th birthday; and in getting

up a suitable celebration the centennial committee asked the writer to get the bee men together and exhibit honey and beeswax. But when the few beemen got together they decided to show not only honey and beeswax, but to get up a bee exhibit. With the help and encouragement of Gleanings and other publications, we got our exhibit under way. The display consisted of bees, wax, honey, one-frame nuclei of three-banded and golden bees, a full eight-frame glass hive with a super of honey on top, and a collection of queens of every race that could be secured at this season of the year and in this locality.

W. H. Laws of Beeville, Tex., and W. H.

Milam, of Moore, Tex., both managed to be present to assist in demonstrating. Besides acting as judge and helping to demonstrate, Mr. Laws also brought one of his finest golden queens and gave her as a prize in the contest, which was won by J. W. Rice, with his big glass hive of bees. As Mr. Laws judges bees in many parts of the country, he could hardly be expected to contribute a fine breeding queen at each place, but this happens to be his own home town.

The bee exhibit was about the most talked-of feature at the centennial and it kept one or two men busy constantly answering questions and helping people to find a queen bee.

The colored population held their part of the centennial in their own part of town, where they have a street with every line of business run by members of their own race. At the request of their committee, Mr. Milam and the writer took several glass cages containing bees, queens, etc., and talked bees for the colored people. I never appeared before a more interested and respectful audience. This kind of friendly separation of the races works satisfactorily to both races here.

The farm demonstrators were so well pleased with the educational feature of the beekeepers' exhibit that they arranged with me to take most of the display to the Green-



A very successful exhibit at Ft. Smith, Ark., centennial, and those who made it.

HEADS OF GRAIN FROM DIFFERENT FIELDS

wood, Ark., fair the following week and talk bees. This fair was just like Fort Smith in most respects. As a direct result of this exhibit, the Fort Smith high school has purchased a hive of bees and started a class in apiculture.

The accompanying photograph shows some of the prize winners at Fort Smith and their displays.

The boy on the left is Harry Davis, age 15 years, the youngest exhibitor. Next is W. D. Strong. Third from the left is E. J. Cline, and next to him is J. W. Rice, who won several prizes. Fifth is W. H. Laws, the judge. At the end is H. P. Gannaway, the dean of the beemen of this vicinity. Mr. Gannaway is probably the largest producer of comb honey in this county.

Ft. Smith, Ark.

E. J. CLINE.

How Much More Extracted Than Comb Honey.

On page 941, Dr. C. C. Miller seems to think the claim that colonies run for extracted honey will produce 50 to 100 per cent more honey than when run for comb, isn't anything more than loose guessing. We supposed this was common knowledge. At any rate, in our old location in Minnesota and our present one in Montana, we have proved to our own satisfaction that this is a fact.

Corvallis, Mont. FRANK MORGAN.

When Introducing, Why not Daub Bees Alone, and not the Queen?

In an editorial, September 15, 1916, the philosophy of the daubed queen is admirably given in these words:

"The general spill and apparent ruin of the combs so diverts the attention of the bees that the queen is forgotten." Some people will object to this method of queen introduction on the score of injury done to the queen by her honey bath. We all know that when honey is spilled over the combs a bee or two will sometimes be drowned; and even if the queen escapes with her life she may not be any the better for her rough experience. I don't see why the bees that are cleaning up a catastrophic mess should not forget a dry queen as well as one that has become an animated honey "blob." Why not pour the honey in, and then (or very soon after) release the queen dry? I don't think much of the strange-odor theory, but the odor of evaporating honey would correct the smell of a strange queen quite as well as her actual immersion.

I was astonished to learn from A. C. Miller that a bee takes only ten trips for honey in a day. Astonished as I was, I soon saw that what he said was true. Take a hive of forty thousand bees—that is, a moderately

strong one that would cast a five-pound swarm. You can count the number of bees that fly out every minute; and I find that when things are pretty busy they number 200. That is 12,000 an hour, and 96,000 in a working day of eight hours—a fair length of day when allowance is made for comparatively slack hours morning and evening. If we presume that each bee takes ten trips this will give a working force of about ten thousand bees, which seems about right. The man who imagines that each bee takes, say, twenty trips a day, will have to say that there are only five thousand gatherers in such a hive, which, as Euclid would say, is absurd.

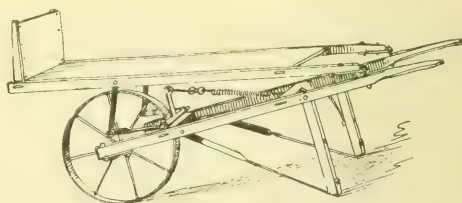
G. G. Desmond.

Sheepscombe, England.

Make It Now if You Need It Next Season.

This wheel-barrow was manufactured by a friend of mine, W. R. Pennock of Stouffville,

Ont., who, in addition to being a beekeeper, is also an expert mechanic. This barrow is the best thing of the kind I have ever seen, for while quite light, weighing less than 40 pounds, yet it is very strong. By simply removing a cotter pin and shifting rods so as to give you a different leverage, the barrow can be made to carry a heavy load and still retain its resiliency. For ordinary use it



A very handy wheelbarrow.

will carry three full 10-frame supers; but by making the shift mentioned, a much heavier load can be handled easily. Mr. Pennock has made quite a few of these barrows this season and every user with whom I have spoken is enthusiastic as to its merit. The picture shown gives a good idea as to general construction.

Markham, Ont.

J. L. BYER.

Unfinished Sections of Previous Season

In The Domestic Beekeeper for January, p. 13, Floyd Markham, of Ypsilanti, Mich., says:

"No one can produce fancy honey nor even No. 1, in sections that have drawn comb in them from the season before." What is the consensus of opinion in regard to drawn comb in sections? I really thought that I was fortunate in having so much drawn

HEADS OF GRAIN FROM DIFFERENT FIELDS

comb for next season. I extracted all that were partly filled, and am using them for baits for first supers, placing four on each side of the super.

C. V. Rice.

Lawrence, Mich.

[There seems to be a general belief that sections containing fully drawn combs of the previous season, and which are filled with honey the second year, are not as nice as those sections containing new comb filled with honey of the same season. The explanation of this may lie in the fact that the cappings do not join as well upon combs of the previous season as upon comb of the current season.

The late B. Taylor, of Minnesota, overcame the difficulty by melting down the cell walls to about half depth. This was accomplished by a little device which he called a comb-leveler. A hot plate a little smaller than the inside of the section was placed against the comb on one side; and when the other side was leveled down the section was ready to be given back to the bees. Mr. Taylor claimed that comb honey from such drawn combs was fully equal to any other, with the further advantage that the bees entered supers containing them much more readily than supers containing full sheets, and in this he was probably right.—Ed.]

102 Barrels From One Porto Rican Apiary.

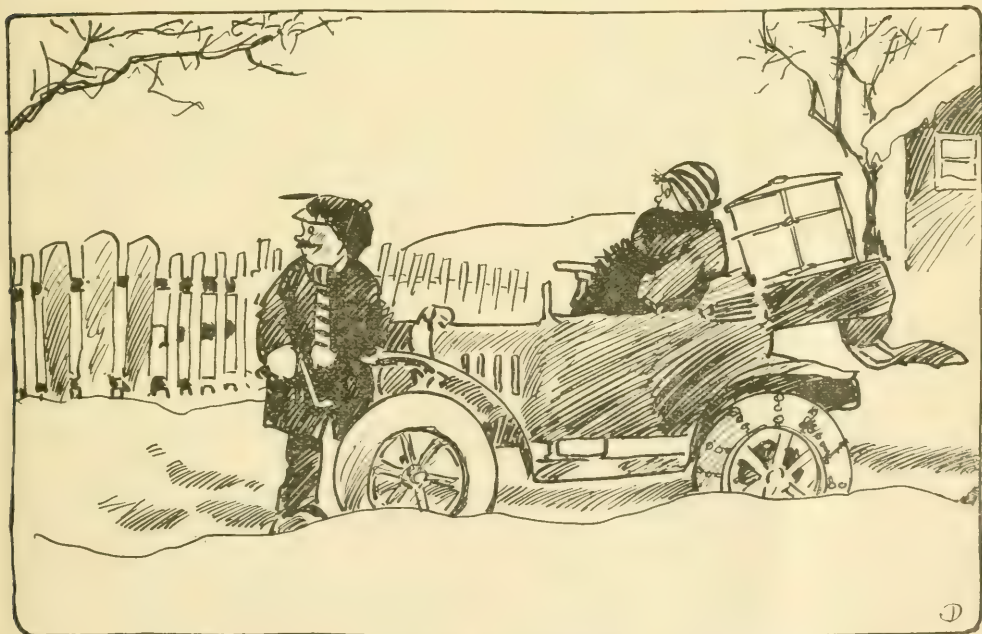
The picture shows one of my three apiaries. It is located in the Barrio de Lares, Porto Rico. From this apiary in 1914 I secured the large amount of 102 50-gallon barrels of



A Successful Apiary in Porto Rico.

honey. However, owing to the heavy winds that almost totally destroyed the flowers, the crops in 1915 and 1916 were very light, hardly paying expenses. This year the crop is 40 barrels.

Lares, Porto Rico. S. COLOM SOTO.



THE BACK LOT BUZZER

Uncle Benny Sourweed has fixed the hole in his fence at last. Been that way ever since his neighbor went through it when the hybrids swarmed last summer. Uncle Benny says it wasn't right, the fellow shouldn't have been in such a hurry, he ought to have gone around by the gate.

"YOUR advice to order supplies early should be printed in caps." — Dr. E. F. Phillips to Editor E. R. Root, Jan. 4.

BEES, MEN AND THINGS

(You may find it here)

"Being single, I was subject to the first military call, but made a claim for exemption on the ground of the importance of honey production to the nation, which claim, altho without precedent in this military district, was granted 'so long as I continue producing honey in goodly quantities.'" — R. C. Fretz, Forest, Ont., Nov. 29, 1917.

"Have to sell my bees. Have been drafted into the army." — L. L. Fereber, Co. B., 118 Inf., 30th Div., U. S. A., Camp Sevier, Greenville, S. C.

"With three sons enlisted and the other rejected for service but now working in the United States Navy Yard, there is need of rigid economy. My bee helper has quit the city letter-carrier service and expects to be with the 'Regulars' on Atlantic Coast soon. Will renew our bee interest when a lasting peace shall have been won." — Clark S. Fuge, Oregon City, Ore., Dec. 24.

"I never enjoyed work more in my life and never had a better appetite. The recent freeze killed many fish. I saw two girls carrying so many big fish on a pole that they had to stop and rest every few rods, and a man had a wheelbarrow full." — A. I. Root, Bradentown, Fla., Jan. 5.

"Open windows while breakfasting, flowers blooming, spring bulbs already up, garden peas six inches high. Come west, young man." — E. J. Ladd, Portland, Ore., Dec. 26.

"Now having a temperature from four to ten degrees below zero and one foot of snow covering the ground." — Watson Allen, Bernardsville, N. J., Dec. 29.

"Have read Gleanings since its first issue. Happy New Year." — F. H. Cyrennius, Oswego, N. Y., Dec. 31.

"I will never forget an armful of old Gleanings dated from wind-mill days till along in the 80's, given me by an old neighbor. I carried some of them in my pockets and when the team was resting from dragging I enjoyed some of the happiest moments. The team never told tales and I dare say dad's horses had many a good rest." — C. R. Morts, Mohawk, N. Y.

"Bees wintering fine so far. Need a flight, tho." — Geo. Chrisman, Homer, N. Y., Jan. 7.

"We had a complete failure in crops this year. It was dry all the year and is still dry. No beemen made any honey here. There was no honey to be got, and I expect every beeman to lose half of his colonies.

I know a beekeeper that owns 900 colonies who says he does not think he could have got 500 pounds of honey last season and never extracted a single pound.

It is the first year we have been out of honey in 22 years." — Lucy Dentler, Taylor, Tex., Dec. 22.

"Bees are wintering well here altho have had it 30 degrees below zero twice. Buried them in snow where they have been for four weeks now, with a board leaning over the entrance for ventilation. Putting my ear to the entrances, I can hear the low sweet hum that says everything is all O. K." — Raleigh Thompson, Underwood, Ind., Jan. 2.

"The defeat of Germany will be of no avail, unless we, at the same time, throw off the shackles that for half a century corporate interests have been welding upon the limbs of American freemen." — G. M. Doolittle in Skaneateles, N. Y., Semi-weekly Free Press, Dec. 25, 1917.

"We are having a very mild winter in Idaho. Today, Jan. 3, it is just as warm as April. The bees are all out." — F. A. Young & Son, Mt. Hume, Ida.

"I never handled bees until this season, so I am a new hand. The writers in the bee journals tell so many things to do I don't know what to do." — A. I. Marston, Mapleton, Ia.

"I wintered four late made colonies last winter in two 10-frame hives, with tight divisions between. In the spring I gave them each 10 frames of honey, but they did not build up rapidly like colonies on 10 frames, and gathered little honey." — D. F. Rankin, Bankston, Ind.

"I am one of the few that have taken Gleanings from the very first issue. I wonder how many of us are left." — O. R. Coe, Windham, N. Y.

Kansas City, Mo., Dec. 15, 1917.—Bees are declared to be wild animals, according to a jury in the Wyandotte County Court. W. T. Holland was acquitted on a charge of grand larceny, as it was shown to the satisfaction of the jury that the bees swarmed to his place. Holland rented a farm from J. C. Hume on which there were 11 hives of bees. When Holland left there were 16 hives and he took five of them. Hume accused him of taking them unlawfully. The attorney for Holland was able to prove that bees were wild animals and so won the case.

"Have been here with the American Forest Unit for a year. Have between three and four million feet sawed at present. They are just beginning to draw it away and load it on the cars enroute for France. If

it were not so rainy this would be the greatest country in the world for bees. There are thousands of acres of heather loaded with nectar. The bumblebees here in a good year will make a pailful of honey, so you can imagine what a good swarm of Italians run on the American plan would do. Most every one here keeps a few swarms of bees, many of them in the old straw skeps. The heather honey has a strong odor, and a pound cut in an ordinary-size room will perfume it so you would almost think yourself out on the moor among the flowers. The honey also has a strong flavor but it is very nice."—Geo. H. Day, Ardgory, Scotland.

"In spite of all the big war news the honey bee gets the entire first column on the front page of the Washington, D. C., Times."—H. L. Kelly, Washington. Mr. Kelly sends along a copy of the great Washington daily to prove his statement.

"We have had a number of days with temperature ranging from 40 to 60 degrees above. Bees seemingly on some days are gathering pollen—something very unusual."—J. W. Beckley, Salem, Ore., Dec. 28.

C. M. Sheafe, Chicago, calls attention to the account of a very early bee hunt in this country told of in "Astoria," by Washington Irving. It is to be found in Chapter 9 of the book, detailing a tour of the prairies.

"This southern Georgia country is the finest bee country I have ever seen."—Z. T. Crawford, Jesup, Ga.

"I want my subscription to run the remainder of my natural life. If I die I may not be prominent enough to be mentioned, but I want the journal just the same."—J. G. Puett, Callbran, Colo.

"As I am a reasonably good mechanic I keep my hives in the best of condition. I think the best is none too good for the sweet little bees."—A. J. Knepp, Middlebury, Ind.

"Wife says she gets nothin' out of me when I get started readin' bees." "I don't mind a sting half as much as a sting by a 'skeeter.'"—Dr. H. C. Bennett, Lima, Ohio.

"We are having high water and the whole country around is flooded. People drive thru water on the main highway with horses and buggies and the water runs into the buggy boxes. We have all the way from two to a dozen such 'spells' as that every year between November and July."—C. D. Wright, Oakville, Wash., Dec. 28, 1917.

"Past year a hard one on the bee men here. Very light crop and colonies weak for winter."—W. L. Pearson, Hermiston, Ore., Jan. 3.

"In the May number of Gleanings, page 243, for 1882, S. D. Moscher of Holly, Mich., referring to A. I. Root's having received an

answer to prayer, suggested that he widen his field of usefulness by offering up business petitions for the benefit of beekeeping. He said: "Ask to have revealed to you the secret of wintering bees without loss, especially your own, and then sell the receipt. Ask about the origin of foul brood; find out whether bacteria are to be feared," etc. Now it was all as plain as the nose on one's face that this was all sarcasm and infidelic. But it was all wasted on Mr. A. I., however, for he innocently and patiently explained at length why that kind of a plan would not work. "Friend" Moscher must have looked a trifle wall-eyed when he read that reply."—From a Reminiscent Friend of Gleanings.

"Thanking you for the best bee journal in the world."—Frank Campbell, Hoy, Ala, Jan. 10.

"Is not M.-A.-O. a Root (er) too?"—M. Johnston, Cayuga, Ont., Dec. 26.

"Has been below zero for two weeks. Have been a beekeeper 25 years, and have never seen the weather so bad as this year." Ray Harder, Catawissa, Pa., Jan. 4.

"Will continue Gleanings as long as I can read."—H. W. Bass, Riverton, Va.

"This has been the worst winter on bees in western Kentucky we have had for years. Bees flying every day up to Dec. 5. On Dec. 6 it was 65 above—and 48 hours later it was 14 below."—M. B. Gill, Olmstead, Ky., Jan. 5.

"I predict heavy winter losses over this part of the country."—Amos Miller, Ashland County, O., Jan. 2.

"Mr. A. I. Root Co.:—I have been told by an old cuss from N. Y. state that you publish a honey bee journal. Now I would like a dozen of those journals from August to now down, and I can read and give them away. Lots of bees in this country and hives are loaded to the bottom. This old cuss took up an old hive of bees for me and I got as much as 100 lbs. strained honey, and the bees he added to a weak Italian swarm I had caught from somewhere. Beat all how he handled those bees and swung them all over himself, and folks around here are afraid of him because he don't get stung. No less than 30 beekeepers within 7 or 8 miles of here. Not one of them has ever seen a bee journal. Some of the honey is bitter. Some is white. He told us the difference was in what it was made from. He has got us all stirred up or nearly crazy. Bees now are storing honey from a white blossom. He the old feller says it is Seneca snakeroot. If that old rascal has lied to us Southerners and he comes this way again he will get killed 20 times or more. It is hotter'n — here yet, and he said it was cold up North. Well, goodbye."—S. Purgeon, Polk County, Ga., Oct. 30, 1917.

THE inspector of apiaries for Massachusetts, Burton N. Gates, in sending out directions recently for "Feeding and Saving Bees," gives the following: "Candy is procurable in paper pie plates or paper dishes. These are to be inverted (candy side down) directly over the bees, on top of the frames, in an empty super. A two pound package is estimated to serve a colony about three weeks. One or more slabs of candy may thus be placed in a super and replaced as often as necessary. Over the candy, fill the super with insulative packing (any dry, warm material) in order to conserve all the heat possible. Keep everything dry. If it is a cold day work rapidly, but feed rather than to starve your bees. Do not delay feeding."



Under date of Jan. 15, John C. Bull, secretary-treasurer of the National Beekeepers' Association, sends word that the program for the National meeting could not be completed at that date. He says the following speakers are expected to be present or send papers: E. R. Root, "Present and Future of Beekeeping"; F. Eric Millen, "The State Agricultural College and Beekeeping in 1918"; Dr. E. F. Phillips, "Extension Work"; E. D. Townsend, "Some Proposed National Work for 1918"; C. P. Dadtant, "Making Honey a Staple"; J. W. Stine, "Legislation — What Can Our Government Do to Help the Industry?"; Geo. W. Williams, "A Merger of All Beekeepers' Societies"; E. S. Miller, "The Future of the National"; John C. Bull, "Government Aid for Beekeeping." As before announced the National Convention is to be held at Burlington, Ia., Feb. 19 to 21. But arrangements have been so changed that instead of the convention meeting in Remey Hall it will have headquarters and hold sessions in the banquet room of the Burlington Hotel. There will be an evening session on Feb. 19, three sessions on Feb. 20 and two sessions on Feb. 21. The secretary gives notice that all who expect to attend should make reservations for rooms in advance so that the hotel management will be able to take care of the beekeepers attending. Address the secretary at Valparaiso, Ind., for a program which may be had for the asking.

dale, Coldwater, White Pigeon, Fenton, Birmingham and Ypsilanti. One of the objects of these meetings has been the organization of county beekeepers' associations, and many counties have organized such associations. The following places had been scheduled for meetings during the rest of January: Jackson, East Lansing, Grand Rapids, Scottville, Big Bear Lake, Elk Rapids, Traverse City, Tawas City, Caro, Saginaw and Owosso. The severe storms experienced interfered somewhat with the attendance, but all meetings were held as scheduled. The attendance has been very satisfactory. The matter of organization has been taken up enthusiastically and the fact that interested and public-spirited beekeepers have been made the officers of the associations assures the success of the organizations. In many cases local beekeepers have taken part in the program. Mr. Erbaugh and State Inspector Kindig have spoken on "Wintering," "Spring Management," "Swarm Control," "The Necessity for Increased Production," "Foul Brood" and "Extracted Honey Production." It will be necessary to discontinue these meetings during the month of February because the state inspector also teaches apiculture at the Agricultural College. The work will be taken up again in March.

Word comes from Los Angeles, date of Jan. 12, that many bees are being fed in the sage districts, but the eucalyptus is bearing wonderfully, and all bees in the eucalyptus districts are building up very rapidly.

Of the 2,000 tons of honey shipped to Italy last fall, as mentioned in September Gleanings, 1,200 tons were lost. This honey was originally loaded into a comparatively small boat. We infer that the pitching of the boat, due to heavy seas, caused the packages to be jammed against each other, with the result that they sprang aleak. It is reported that the bottom of the boat was a veritable lake of honey—and such a mess. The incident emphasizes the importance of using better cans and better barrels, and bracing them in the hold of the boat. Why the consignee did not cleanse and use the honey afloat in the hold of the boat, we don't know, unless it was mixed with other commodities of a character that would ruin it.

Michigan beekeepers are being lined up for a larger honey production in 1918 than ever before. State Inspector of Apiaries B. F. Kindig, co-operating with the special field agent of the U. S. Dep't of Agriculture, P. W. Erbaugh, has been holding a series of county meetings. Up to Jan. 16 meetings had been held in the counties of Marshall, Mason, Williamston, Munith, Adrian, Hills-

In connection with the effort to increase food production, the Bureau of Entomology, U. S. Dept. of Agriculture, has enlarged its extension work in beekeeping by the appointment of several new men. During the winter months, an effort will be made to reach beekeepers with the message that an

immediate increase in honey production is needed and during the active season field meetings will be held to assist beekeepers with practical production problems. The following men have been appointed as special field agents: E. F. Atwater, of Meridian, Ida., assigned to California, Arizona and New Mexico; J. H. Wagner, of Wetmore, Colo., assigned to Washington, Oregon, northern Idaho and Montana; C. E. Bartholomew, transferred from Tennessee and assigned to Colorado, Utah, southern Idaho and Wyoming; E. W. Atkins, of Ames, Ia., assigned to Iowa, Missouri, Kansas and Nebraska; G. C. Matthews, of Hansen, Ida., assigned to Illinois, Wisconsin and Minnesota; P. W. Erbaugh, of East Lansing, Mich., assigned to Michigan and Indiana; David Running, of Filion, Mich., unassigned (Jan. 1.) Kenneth Hawkins will continue work in the Southern states, and C. L. Sams will remain in North Carolina. The work in Tennessee has been discontinued. The increased activity in extension work in beekeeping is made possible by the assignment of funds from the emergency appropriation to the Department of Agriculture for stimulating agriculture and the distribution of products, as noted in the January Gleanings.

The Iowa State College is making special efforts to induce Iowa beekeepers to produce the maximum of honey the coming season. In order that a large number of beekeepers may be aided, a correspondence course in beekeeping has been prepared. The course includes 10 lesson outlines, which will be sent out one by one, as needed, thruout the season. Besides the 10 lessons, each student enrolling will be supplied with two reliable books on beekeeping management. Anyone having one or more colonies and wishing to keep bees with more pleasure and profit, is urged to enroll for this course. A fee of \$3 will be charged to cover the cost of the books and this will be the only expense, all correspondence being included. Besides the correspondence course in beekeeping, there will be a one-week beekeeping short course in May, notice of which will appear later. A large number of field meets will also be arranged for the working season and apiculture instructors will meet a large number of Iowa beekeepers. This good educational work is at the direction of F. Eric Millen, State Apiarist of Iowa.

The beekeepers of Massachusetts met at the call of the Secretary of the Board of Agriculture, Wilfrid Wheeler, at Horticultural Hall, Worcester, Mass., on Jan. 9, and organized a bee association known as the "Massachusetts State Beekeepers' Association." Dr. B. N. Gates, of Amherst, was made temporary president. The action was voted unanimously. The intention is to incorporate the organization and to affiliate with it all the local societies in Massachu-

setts. E. R. Root was present and spoke on the "Present and Future of Beekeeping."

The "First Manual of the North Carolina State Beekeepers' Association" has just been published and distributed among the members of the association and others. This association, altho only organized in January, 1917, is an energetic organization. This first manual contains a history of the organization and how it came into existence, the association's constitution, "Recommendations" for better beekeeping that have been made to the members, "General Information," as well as a complete list of the membership. (North Carolina has great possibilities as a beekeeping state which now seem about to be encouraged and developed. The second annual meeting of the association was held at Newbern on Jan. 10 last.

At a meeting of the Venango County (Penn.) Beekeepers' Association held Dec. 27 at Franklin, Pa., the name of the association was changed to that of the Northwestern Pennsylvania Beekeepers' Association. Geo. H. Rea, chief apiary advisor of the Department of Apiculture, Division of Zoology, of Harrisburg, was present and gave an interesting address. The annual meetings of the association hereafter will be held in September, and a field meeting will be held next May. The president of the association is C. H. Williard, of Franklin, and the secretary, J. A. Scannell, of Franklin.

The South Dakota Beekeepers' Association held a joint session with the South Dakota State Horticultural Society on Jan. 23, at Aberdeen. Among the beekeepers who spoke were L. A. Syverud, of Yankton; R. A. Morgan, of Vermillion; W. P. Southworth, of Sioux City, Ia.; E. G. Brown, Morning Side, Sioux City, Ia., and Geo. F. Webster, Sioux Falls, S. D. The beekeepers were given a part in the horticultural society's program under the headline, "Beekeeping in South Dakota."

At the annual stockholders' meeting of the Idaho-Oregon Honey Producers' Association held recently at Ontario, Ore., the following members were elected directors: C. E. Dibble, Payette District; J. M. Stark, Middletown District; J. F. Weaver, Ontario District; L. P. Peterson, Vale District; H. E. Crowther, Parma District; P. R. Randall, Nampa District; Homer Cheney, New Plymouth District. At a later meeting of these directors the following officers were chosen; C. E. Dibble, president; J. M. Stark, vice-president; P. S. Farrell, secretary-treasurer. At the annual meeting no attempt was made to carry thru any program, the entire session being devoted to business pertaining to the season of 1917, and to discussion relating to ways and means to widen the scope of the association's usefulness in the future.

AFTER the Home paper for January was in print, in searching thru our back numbers of thirty years ago I accidentally came across something that illustrates so vividly a part of the text of that Home paper that I reprint that part of it:

A little explanation may be needed. We had a very interesting convention (30 years ago) at Saginaw, Mich. In my talk on high-pressure gardening I mentioned the growing of lettuce. One of the friends there said I ought to visit Grand Rapids and see what was being done *there* with the *new kind* of lettuce. Therefore I decided to take in Grand Rapids on my home trip. Now comes the little incident that fits in a remarkable way the little text—"Try me, and know my thoughts, and see if there be any wicked way in me."

I was ready to start home; but for certain reasons I wished to purchase a ticket at first only to a neighboring city, and I asked the agent how much it was. He said \$3.35. I gave him four paper dollars. The train was ready to start, and he hurriedly handed me a silver dollar, half a dollar, a dime, and a nickel. In my haste I came pretty near not counting it; but when I got the silver dollar in my fingers, and held it up, it occurred to me that I ought not to have a whole dollar back in change. In other words, he had made a blunder. Now, I am ashamed to say it; but I guess I had better acknowledge that self suggested putting all the change in my pocket, without telling him. I believe I have boasted several times that the "almighty dollar" never tempted me from the path of duty; but there I was, actually coveting that bright round silver dollar that I knew was not my own. I did not hold it in my fingers, I presume, a whole second; but in that second, self (or Satan) whispered, "You must have misunderstood him. He probably said \$2.35." Then came the thought, "Why did he not give me back one of the paper dollars I gave him?" But self put in again, "There is not time to bother with it now, anyhow; besides, it is *his* business—not yours. You gave him the money, and he gave you back what you ought to have." Self seemed to get a little bolder here, and added, "Your expenses on this long trip will be larger, doubtless, rather than less than you had calculated; better hurry up, or you will lose the train." I can not tell even now, dear friends, why such thoughts should have come into my mind. It seems, as I think of it, that it was a remnant of that old life before I belonged to Christ Jesus. Then I used to have such temptations, and I used to yield to them, too, thinking, poor silly fellow! that I was adding to my stock of this-world's goods. Why, it made me fairly tremble as I reflected of a professor of religion, and one who even presumes to point out the way for others, listening to such suggestions as the above.



Try me and know my thoughts, and see if there be any wicked way in me.—PSALM 139:23.

Now I know that thou fearest God.—GEN. 22:12.
God forbid that I should glory, save in the cross of our Lord Jesus Christ, by whom the world is crucified unto me, and I unto the world.—GAL. 6:14.

lar for which I have rendered no sort of equivalent? For shame!"

I believe it was Moody who once said that no man could be a Christian, with a single dollar in his pocket that belonged to somebody else; and I believe we should have better Christians if there were more who felt convinced of this. If this be so, you had better lose even your life, than to go off coolly and deliberately with only a single dollar in your pocket that is not justly your own. "What shall it profit a man, if he gain the whole world and lose his own soul?"

"My friend, I gave you only four dollars," said I. He looked at me, somewhat embarrassed; and as I showed him the change which he had given me back, he took the dollar and colored a little to think I had caught him, a ticket-agent, in such a blunder. I thought if he could forgive me, I could forgive him; and I took great pleasure in remarking to him that I did not want a dollar belonging to anybody else; and with a good-natured smile I suggested that "mistakes will happen," etc. He caught my eye, and his face brightened. The happy look that shone forth from my face seemed to have touched his spirit just right; and who knows but that the glimpse of sunlight went along with him as well as along with me? As I thought it over, it occurred to me that possibly God was trying me as he tried Abraham of old. Is it not possible that he is waiting and watching for men whom he can trust? Who knows but that he has been saying, "I have a great deal of work for Mr. Root to do for me, and I want to be sure that he can resist temptation"? You know he said to Abraham, "For now I *know* that thou fearest God."

This trial, however, was but a preface to another. May be you will come to the conclusion that your old friend A. I. Root is but a poor weak sinner after all; and if you do, dear friends, you will think just as I do about it. I will now explain to you, that the object of my journey to the great city of Grand Rapids was to see the immense lettuce-houses, which I had learned at the horticultural convention were there. I had also learned they had a new variety of lettuce, superior to anything else in the world.

Skipping the account of my visit to the lettuce-greenhouse, and paying \$50.00 for half a pound of seed, and giving the name "Grand Rapids" to this new lettuce to be grown under glass, we come to the point where I was once more starting for home.

A few minutes more, and I was almost startled when the agent of one of the great union ticket offices handed me *two* silver dollars more than I ought to have. I felt glad in my heart, however, to find there was not even the faintest trace of a desire to

I do not know how long it took for me to recoil with my whole nature, and bid these evil thoughts to be down and away, as I would speak to some ill-natured cur that, with muddy feet, might try to spring up and soil my clothes. I said, mentally, "Get thee behind me, Satan; do you suppose I am so silly as to think I could be happy with a dollar that is not really my own—a dol-

keep them. If Satan made just a little impression the other time, he didn't a bit here, and with it came the feeling, "This money *all* belongs to the Master, and not to myself." So long as he supplies me with all I want and all I need—why should I covet anything? Oh, the unsearchable riches of those who have their whole trust in the resources of Him who is Lord of all!

All at once one of the friends whom I had left at the convention came into the car where I sat. He was on the way home, and was as much surprised on seeing me as I was on seeing him. I did not know how soon he would be called on to leave me, and so I came, pretty soon, squarely up to the work I felt the Master had given me to do. Said I, almost abruptly,—

"Friend—, you are a Christian, I believe."

He looked up at me with a smiling face and said:

"Mr. Root, just the very moment my eye fell on you as I came into this car, I felt that I should be called upon to meet this question. And now I want to tell you that I am glad that you have said just these words to me, even tho it be true that I am not and never have been a member of any church. The reasons why I have never united—that is, if they are fit to be called reasons—are, that the church I had thought I must unite with, if any, is not near at hand. I have been helping in another church; and my wife and I have been studying the Bible, and have even gone so far as to have family prayers, but we are not members of any body of Christian people. I have known my duty, but somehow I have longed to have somebody assure me, as you do, in your earnest way, that it was just what I ought to do."

The church he mentioned is a new one in a new section of country, and it is doubtless weak and very much in need of the energy, intelligence, and spiritual strength which these two young bee-friends can give it. Its influence for good on the community round about will, without question, be ever so much greater for having these two come forward and take a bold stand, and let their faith be shown by their works. As we parted he took me by the hand and promised that, if his wife approved (and he felt sure she would), they would at once, before another Sunday, go to the pastor and tell him of their determination and wish to become members of the church. A strange feeling comes over me when I think of his remark, that he *expected* me to labor with him on this very question. If such responsibilities are coming upon me, how great is the need that I be pure in heart and honest in deed! "Lord, help!" comes up again and again; and when I think of the little conflict—yes, perhaps even *feeble* conflict—over that bright round dollar, how earnestly can I pray that I may be cleansed, both soul and body, from all temptations of a like nature, taking no thought for what we shall eat or what we shall drink, nor yet for the body what we shall put on; for is it not true, that a life with Jesus is incomparably more than meat or raiment, or *any thing else* that the world can offer?

My good friends, I will now take the liberty of telling you that the beekeeping friend I had that talk with on the cars was none other than George E. Hilton, who has now gone to his reward. The result of the promise he gave me was that he himself and his wife united with that little church, and cheered up a poor discouraged minister. Not only did *he* unite, but a near relative also, and *his* wife; and friend Hilton was immediately appointed superintendent of the Sunday-school, and became a most earnest and devoted Christian worker for the rest of his life. Nobody will ever know

the final outcome of the talk we had in just one little hour on that train. Let us now go back a little.

Suppose I had given way to the temptation to keep that silver dollar. It makes me tremble, even yet, to think how nearly I had given way. The train was ready to start, and I think the conductor had called out, "All aboard!" But the consequence stood fairly before me. I had recently stood up before the great wide world—that is, so far as I could thru that little journal; and if I had gone off just then with that dollar in my pocket, how could I plead with anybody for Christ Jesus? It could not be done. "If I cherish iniquity in my heart, the Lord will not hear me." Had I kept that one single silver dollar, I should not have had the honest and innocent enthusiasm to hunt up and give to the world that Grand Rapids lettuce.

Now, if that experience is not something almost miraculous, then it certainly is wonderful that, for the second time in 24 hours, an expert ticket agent in the great city of Grand Rapids should hand me *two* silver dollars that did not belong to me. Please do not think I am boasting of what I did, dear friends; for "God forbid that I should glory save in the cross of Christ." And in the same manner I want to tell you that it is *not* what *A. I. Root* did that I am now writing about, but what the Holy Spirit did *thru* me. I suggested, as you may have noticed, that God was *trying* me. In the early days of my Christian work there were some wonderful answers to prayer, as our older readers will remember. They amounted nearly if not quite to miracles; and will it be too great a stretch of the truth to suggest that the Holy Spirit did actually plan to have that Grand Rapids agent hand me two dollars by mistake? Had I not been possessed of a clear conscience, "void of offense toward either God or man," how *could* I have plead with friend Hilton as I did that afternoon with money in my pocket that was not honestly my own? The thing would have been impossible.

Let me now hold up before you another beautiful text that has been a shining light to me thru all the years of my Christian life. David said, in the anguish of his soul, after his great crime, "Create in me a clean heart, O God, and renew a right spirit within me." A little further on he says again, "Then will I teach transgressors thy ways, and sinners shall be converted unto thee." David himself recognized the fact that it was utterly impossible for him to plead for forgiveness and righteousness so long as he felt oppressed by a guilty conscience. After he had repented—yes,

thrown himself prostrate in the dust, and plead for forgiveness, then, and not before, could "sinners" be "converted."

My good friend, by the time these words come before your eyes I may be dead and gone, for it is now October 27 that I am dictating, this Home paper; but whether I am dead and gone or not, please consider the far-reaching consequences of having a single dollar in your pocket, whether by accident or otherwise, that is not *honestly your own*. Once more

Your old friend,

A. I. Root.

PREACHING THE GOSPEL TO DEAF-MUTES.

I confess it was a pleasant surprise to me to find that the gospel has been preached by the sign language to the unfortunates who cannot hear, in different institutions more or less thruout our nation. Read the following:

My Dear Mr. Root:—Thru GLEANINGS I note that you are greatly interested in uplifting or bettering humanity. Lately you spoke a word for the deaf-mute. But this time you failed to strike the right chord. Are not all materialistic advantages futile compared with the "one thing that is needful"?

Perhaps you will be glad to know that the Lutheran Church maintains missionaries thruout our country who preach the gospel to the deaf-mutes in their sign language.

If you should publish in GLEANINGS the names and addresses of these laborers in the Lord's vineyard, as given on a separate sheet, much good would result therefrom. It may become the means whereby sooner or later the one or the other of these unfortunate people, who as yet do not know Jesus, shall learn the Way of Life—truly a noble act and surely a work of uppeaval of humanity!

E. C. STIEG, Lutheran Pastor.

Clayton, Ill., July 10.

PASTORS OR MISSIONARIES FOR THE DEAF-MUTES.

Rev. Arthur Boll, New York, 115 E. 31st St., preaches at three mission stations in the East.

Rev. G. W. Gaertner takes care of six stations in Oregon and Washington.

Rev. Louis Jagels, Kansas City, Mo., 4124 Angas Ave., has ten stations in Kansas, Missouri, Nebraska, Oklahoma, and Iowa.

Rev. N. F. Jensen, Los Angeles, Cal., has five stations in California.

Rev. John Solvner, Minneapolis, Minn., 1221 N. 22d Ave., has eleven stations in Minnesota.

Rev. Otto Schroeder, Detroit, Mich., 1366 Trumbull Ave., has eleven stations in Michigan, Indiana, and Ohio.

Rev. C. Schubkeggel, St. Louis, Mo., 4536 Lohade Ave., has six stations in Missouri, Kentucky, and Indiana.

Rev. N. P. Uhling, Chicago, Ill., 1412 N. Fairfield Ave., Humboldt Station, has six stations in Illinois and Indiana.

Rev. Tr. M. Wangerin, Milwaukee, Wis., 1711 Meinecke Ave., has eight stations in Wisconsin.

GAS FUMES FROM THE EXHAUST OF AUTOMOBILES.

We found the following in the Cleveland *Plain Dealer* from the excellent doctor who gives us a short health article every day:

There have been a number of deaths attributed to inhaling gasoline exhaust fumes. The poisonous substances in exhaust fumes are odorless, colorless, and tasteless. The inhalation of even a small amount of these substances daily will undermine your health. Some of the symptoms caused by the carbon monoxide which is present in engine gas are headaches, pain in the stomach, palpitation, "stiff" neck, dizziness, or throbbing in the temples, loss of appetite, etc. The danger in garages or workshops can be eliminated, however, by providing plenty of fresh air. Open doors and windows of the garage, or discharge exhaust gases directly to the outside. Do not run your motor in a closed garage.

I at once carried the above clipping to the foreman of our garage; and he suggests that, while the above is all true, those who work in garages become in time more or less *immune*, to the effects of the carbon monoxide, much in the same way that beekeepers become immune to bee-stings. In proof he says that people who come in from outdoors are badly affected right away, while the men who work in the garage right along do not seem to mind it. I made the remark that, even if this is true, it will be better for the general health *not* to become immune; and Mel Pritchard (our queen man) who was present, suggested that, in his opinion, it is better, in like manner, to avoid as much as possible "*becoming immune*" to bee-stings. In other words, while it is true that one after being stung a good many times does not mind it, he had better by all means have a veil, smoker, etc., in order to avoid being stung severely.

A HOME-MADE VULCANIZER.

I have made me a vulcanizer to mend my own tires. I use the top of a large tin box set in a wooden clamp, this clamp to have a set-screw to clamp over the patch, and then fill the box-cover with hot water; and by the time the water is cold the patch is vulcanized. I can patch a tire in a few minutes that the garage man charges me 75 cts. to fix. If I do not have hot water ready I use wood alcohol or coal oil.

J. H. ROOT.

Pima, Ariz., Oct. 2.

The above, from my brother, I have submitted to the man who has charge of our garage; and he says that, altho he has never tried hot water, he thinks it would, without doubt, work all right. Perhaps some question might come up as to whether the water should be boiling hot or not. No doubt the plan will work.

THE HEN THAT LAYS THE EGGS.

With the present high price of grain, and, in fact, almost everything else that you can get hold of for chicken feed, it is exceedingly desirable to keep track of the hen that lays the eggs. I notice that the poultry-journals of the present time seem to agree that the best layers are *not* the "yellow-legged" handsome-looking hens. The hen that lays 200 eggs a year, or anything near

that, must be a hard-working hen; and if you will notice carefully you will see that the legs of these extra layers have a bluish tint. Dr. Sanborn, in the *American Poultry Advocate*, writes as follows:

Over and over again, day by day, it was urged on us to get rid of the hen with the yellow shank, yellow beak, yellow skin, contracted pelvic bones, because such a hen in September had been, and would still be, a low producer of eggs. We were told that, if we had any doubts in the matter, to divide our flock by this method, hold the two parts, and see what the egg record was of the two lots. It was well put, I thought, when we were told in simple words that we should find that one of the flocks would be found doing the bulk of the laying.

In another part of the journal he gives expression to the following:

One of my friends paid eighteen dollars for the use for three weeks, last spring, of a good bred-to-lay cockerel. He got over fifty chicks from the eggs set, and the added cost per chick was not at all high. You want to get bred-to-lay stock, not culls from some backyard breeder of show birds. In almost

all the breeds you will find certain strains that have been handled to breed for large egg production. Do not for an instant think that all birds of a variety or breed lay alike. There is as much difference in their lay-work as in the color of feathers.

Most of us would think that a dollar a day for the rent of a cockerel is an awful price; but if this cockerel were a "select tested," as beekeepers express it, it might be a good investment after all. But I confess I do not know how one could be sure that a cockerel is worth that much until he had been "tested and tried," or, in other words, he would have to be a bird two or three years old, so that he could be the father of pullets that had shown themselves to be extraordinary hens. Such a cockerel might be worth a great deal of money; and if you could not afford to buy him, it *might* pay a pretty good price just to put him a few days with a flock of laying hens that had in a like manner made a big record.



HIGH-PRESSURE GARDENING

OUR FLORIDA GARDEN.

When we reached our winter home, Nov. 9, we found it a worse wilderness of weeds, velvet beans, cornstalks, etc., than any summer before, probably because Wesley gave it less care. The reason for this was that usually he looks after it when not particularly wanted elsewhere. Well, during the past summer he had plenty of jobs with better pay than usual. He got seven bushels of beautiful hard "Cuban Flint Corn" into the crib of poultry netting that I made, but with nobody around the rats managed to get in and ate perhaps two bushels, and the shelled cobs on the stalks out in the garden would have made perhaps 10 bushels altogether of beautiful, nice corn. We ground some in our little mill, and I think it made the finest mush I ever ate with some Wisconsin honey to go with it.

By the way, I am eating more honey this winter than I have for years, and my health and digestion are better than for years.* Maybe the cold Florida weather we have been having agrees with me.

Well, among the great rank weeds (besides the corn) there was the Roselle, or "Florida cranberries," as some call it, and the chayote. I have been telling you about having hanging from the overhead trellis 20 or 30 large fruits, ready to eat, and

also ready to grow; in fact, some of them had started to grow already hanging on the vines overhead. I pronounce the fruit full as good as egg plant, but Mrs. Root doesn't quite agree with me.

Now comes the sad "sequel" to my garden story. On Dec. 9 (my 78th birthday) we had a freeze, and, as usual, just after a rain. Our potatoes, knee high, were covered with empty burlap sacks, and were but little injured, but chayote and Roselle couldn't be covered and so were brought to a sudden standstill. We tried various ways to protect corn, beans, eggplants, tomatoes, etc., by hoeing dirt over stuff just out of the ground, covering with newspapers, etc.; but the empty sacks gave best results, and were less trouble.* If there is wind, the papers must be held down with dirt, and if soil is hoed over the plants, they are more or less injured in getting it off.

Well, we got thru the first cold snap with but little loss, but we had so many such frosts and freezes, just after every little shower, that the plants got discouraged, and I am sorry to own up that I got more or less discouraged. We have perhaps covering for about 100 hills, but along in early January came another cold spell, and after putting on about a dozen sacks I decided

*This beautiful hard corn came from corn planted where potatoes were dug in March and April, and after May 1 had no care whatever. It just pushed its way with the weeds, velvet beans, etc.

*A porous blanket or comforter of wool is warmer than paper or tight cloth. Oil cloth over potatoes seemed almost no protection at all, while coarse sacking that you could almost see thru, caught the white hoar frost, and green stuff under it was unhurt.

to let the rest take their chances. The weather turned suddenly cold, and all I saved of the tender stuff was the melons under these dozen sacks. Of course the lettuce, onions, beets, peas and hardy things came thru, with no protection, but they look a little sick, yet. All potatoes above ground look dead, but all except those "knee high" will probably start up again.

Now here is a discovery—new to me at least. Just before the freeze, a sack of Triumph potatoes, buried close together to make them sprout, were getting so far along that we were hurrying to get them out in the field; in fact, they were just beginning to push thru the ground, some of them. Now all the potatoes, out in the field, that were just pushing thru in like manner, were killed black and dead. But this "starting bed," with no protection at all,

kept right on growing, and are now a mass of green. Some of the potatoes were quite large, and being near each other, they, in some way, generated heat that kept the frost off. Is it not true that germination, or vegetable growth of any kind, generates heat, in some way as growing animals give out heat, more or less?

Please, kind friends, don't come to visit my garden just now. It isn't pretty. Wait a little. We have had the coldest November and December, by far, down here, of any in my 10 winters past in this region.

You may come and see the electric windmill, if you wish. The garage for the electric auto is done. Piers and anchors of cement are ready for the tower, which we expect to put up next week, to await the outfit from North Dakota.



TEMPERANCE

A KIND WORD AND SOMETHING ELSE FROM AWAY OFF IN WYOMING.

Mr. A. I. Root:—As I know you are very much interested in Ohio going dry, and every other state for that matter, I am going to send you a song composed by a neighbor of ours. It might be you could use it there for good. If you could I know Mr. Shope would be glad, as he is the right kind. I am always glad to get GLEANINGS, and I always read your part first. The last issue about harnessing the wind for all kinds of uses is all right. I believe our state is the richest spot on earth as regards wind. It is also very rich in oil, coal, and pure air. We also raise fine honey. I will not look for an answer to this. I just want to say that I am glad there is such a man as A. I. Root, or, in other words, "pat you on the back."

F. S. HARTER.

Wheatland, Wyo., Dec. 17.

"WYOMING'S GOING DRY."

Words by P. A. Shope.

Tune, "The Battle Hymn of the Republic."

Our people soon will have a chance to vote the traffic out;

We'll win in every county with a glad, triumphant shout;

We'll beat Old Booze with ballots and we'll put the foe to rout—

Wyoming's going dry.

CHORUS.

Glory, glory, hallelujah!

Glory, glory, hallelujah!

Glory, glory, hallelujah!

Wyoming's going dry.

The fifth of next November we will finish up the fight;

We'll put Booze in his coffin, and we'll nail the lid on tight;

We'll win because we labor, and we know our cause is right—

Wyoming's going dry.

Author's Note.—This was written for and first used in the Sunday-school which has elected me its superintendent twelve consecutive times. (You know we sometimes take undue liberties with "our own folks.") A number of friends were kind enough to express their appreciation of the effort, and to say that it ought to be sung in every Sunday-school in the state. It therefore gives Mrs. Shope and me pleasure to present this to the cause with our compliments and prayers, and to say that, so long as the supply lasts, more copies can be obtained free by addressing us at box 103, Wheatland, Wyoming.

It is respectfully suggested that the best results will be obtained by teaching the words to your folks and pasting the copy in the back of your song-book.

Wheatland, Wyo.

P. A. SHOPE.

USES BEER AND TOBACCO, HAS GIVEN UP GLEANINGS, AND YET WANTS GLEANINGS FOR ITS TEMPERANCE ARTICLES.

Dear Sir:—I received your letter of Oct. 5th and wish to state that I do not want to renew my subscription. I have only two colonies of bees, and no proper tools to handle them with, nor means to get them, and having been stung more than once I have decided to quit bees for good. If I could afford it I would keep your paper for the sake of the articles you write against booze and tobacco. Altho I smoke, and enjoy a glass of beer when I get it, about once in six months, I have no respect for anybody who wants to justify the use of these articles; and I enjoy your booze-fighting as much as a glass of beer. Strong liquors I consider poison of the worst kind; and if beer has to go for the sake of killing whisky, then it ought to be killed too.

JOHN A. K. SCHLICHTING.

West Swanzy, N. H., Oct. 11.

My good friend, I am sorry to know that you have become discouraged about keeping bees; but it rejoices my heart to have you say you agree with me in regard to booze

and tobacco, especially as you use both, at least to some extent, and especially do I rejoice at your concluding sentence; and in consideration of this remarkable and honest acknowledgment we take the liberty of sending you GLEANINGS a little longer, free of charge. May God bless and guide you in whatever you do.

CIGARETTES FOR THE SOLDIERS—MORE TO BE FEARED THAN GERMAN BULLETS.

We clip the following from the Jacksonville (Florida) *Times-Union*:

It seemed to be the universal conclusion, based on experience, that the cigarette was a coffin-nail. Now the papers that exploited this conclusion are asking for money to provide cigarettes for our boys in France.

We clip again from the *Association Men* for October:

The millions of cigarettes now being fired at our soldiers will every one hit its mark and will do its mischief. More American soldiers will be damaged by the cigarette than by German bullets.

The above clipping is from an article by Dr. J. H. Kellogg, of Battle Creek, Michigan, entitled "The Decay of American Manhood."

The *Times-Union*, it seems, has hit the nail on the head. It has for some time past been beyond my comprehension how sane people, after having banished booze from the army, should recommend sending cigarettes to our soldiers, especially just after almost every periodical in our land has had more or less to say about "coffin-nails."

I heartily indorse Dr. Kellogg; for I do believe that cigarettes are more to be feared than Germany or German bullets, or almost anything else that can happen. How can a just and righteous God hear and answer our prayers when not only the Red Cross but even some of the churches are sending cigarettes to our soldiers? The Y. M. C. A. has been accused of the same thing; but they come out square and fair, and declare themselves "not guilty."

FROM BRADENTOWN, FLORIDA, TO FORT COLLINS, COLORADO, IN A FORD CAR.

Let me explain that friend Ault purchased the above car and trailer about a year ago, I think. The trip mentioned below includes his wife and three children. I presume they did considerable camping in order to save expense. In that way the cost is less than a railway ticket for the family, besides the expense of shipping the auto by rail. Of course, nothing is said about the wear and tear of the machine on such a long trip; but as the little Ford seems to be doing good service year after year, the slight expense for upkeep, we presume, was

not very much. Below is his account of the trip, etc.:

Mr. Root:—I sold 200 colonies, nearly all of which were very strong, with one or two supers and heavy stores, together with a lot of supplies and an extensive outfit, for \$1200. If I had the bees and outfit here in the condition in which I sold them, they would be worth nearly twice as much. I am told that bees here, consisting of brood-chamber of only eight frames, are difficult to secure at \$7.00 a colony.

We came north with our Ford car and had a delightful trip. We came thru Florida, Georgia, Tennessee, Kentucky, Illinois, Missouri, Iowa, Nebraska, Wyoming, and south again to our friends and our home at this place.

We started July 31, and reached here Aug. 18. We stopped several days on the road with friends and relatives. We could have made the trip in two weeks or less if we had come direct and without stops.

It may interest you to know that the total expense of the trip was considerably less than it would have been for railway fare alone. In nearly all the country we passed thru, crops were good, but nowhere any better, if as good, as right here in north Colorado; and nowhere did we find apples so plentiful and so good; neither did we see any scenery so fine.

A. E. AULT.

Fort Collins, Colo., Aug. 22, 1917.

FRIEND AULT BACK IN HIS COLORADO HOME.

Crops of grain and hay have been heavy, and prices are higher than ever before. Sugar beets are yielding well. I see many fields that will yield one hundred dollars or more to the acre.

Beans were grown extensively here the past season. They are grown on "dry land," a land that is not irrigated. I have seen thousands of acres planted to beans, and they are yielding a profit of thousands of dollars.

The apple crop is heavy, and the quality of the fruit is fine. I have picked box after box of the finest apples, and I rarely found one that was wormy.

Today I saw "spuds," or just potatoes, that were grown on dry land. The best of them would weigh about two pounds, and were four inches or more in diameter. Irrigation causes the potatoes to grow larger, but the quality is not so good.

Feeding cattle and sheep is a great industry here. Millions of sheep and lambs are finished here; also large numbers of cattle.

Wages are high, and help is in great demand.

A. E. AULT.

Fort Collins, Col., Oct. 21, 1917.

A KIND WORD FROM "WILD JIMMIE." SEE P. 749 AUG. 15, 1916.

Dear Mr. Root:—I shall never forget the words you said to me up at our orchard last summer when you were in Michigan. You know I was leader at prayer-meeting, and you asked me to promise you I would stick to it and do my best. Those words come back to me often, and I have done my best ever since; and before I left home I was teaching the young people's Sunday-school class at Bingham, and there were more than twenty in the class.

I know if I have faith God will help me thru life. May God bless you, dear friend, for speaking those words to me last summer, for they have been a great help to me.

Alliance, Ohio.

JAMES HILBERT, JR.

Classified Advertisements

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

Small lots of off-grade honey for baking purposes. C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

FOR SALE.—60,000 lbs. of No. 1 clover honey and 10,000 lbs. of fall white-aster honey of good quality, put up in 60-lb. cans. Will sell to highest bidder. W. B. Wallin, Brooksville, Ky.

HONEY FOR SALE.—Light color, amber color and dark color. All in bbls., 700 lbs. net each. Granulated. Mostly from sweet clover. Make me your highest offer F. O. B. cars here (29 miles east of Montgomery). W. D. Achord, Fitzpatrick, Ala.

HONEY AND WAX WANTED

WANTED.—Comb and extracted honey. J. E. Harris, Morristown, Tenn.

WANTED.—To buy a quantity of dark and amber honey for baking purposes. A. G. Woodman Co., Grand Rapids, Mich.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

WANTED.—Beeswax. We pay higher than market price; let us know how much you have, and if possible send sample; get our quotation before selling your wax. Queen Mfg. Co., Falconer, N. Y.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

BASSWOOD AND EVERGREEN TREES.—Send for list. W. M. Hansen, Jr., Niles, Mich.

FOR SALE.—500 extracting-supers, nailed and painted, with frames. Will sell cheap. A. F. Stauffer, Delta, Colorado.

Read McQueen's advertisement for legume inoculation. It points the way to more for your work and money.

FOR SALE.—White sweet-clover seed, hand gathered. Write for quotations. E. C. Bird, Boulder, Colo.

Beekeepers, let us send you our catalog of hives, smokers, foundations, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

FOR SALE.—Comb honey apiary, 100 colonies, best of location. Alfalfa and sweet clover. E. J. Cheek, Merino, Colo.

FOR SALE CHEAP.—50 Danz. hive-bodies with frames, 100 Danz. supers, 25 slotted section supers and 25 plain section supers. The Stover Apiaries, Mayhew, Miss.

NORTHWESTERN BEEKEEPERS.—Order Root's Supplies near home and save time and freight. Geo. F. Webster, Valley View Farm Apiary, Sioux Falls, S. Dakota.

Printing for beekeepers; 100 envelopes, 100 letter-heads or noteheads, 75 cts. Stationary and printing price list free. Alfred Bentz, Granton, Wis.

FOR SALE.—Yellow bloom sweet clover seed, 95.64 per cent pure seed, Gov. test, 15 cts. pound. C. Shinkle, Williamstown, Ky.

FOR SALE.—400 dovetailed supers for 10-frame hives, 300 pattern slat, 100 T tins; good condition. J. A. Everett, Edgewater, Colo.

FOR SALE.—100 Root 8-frame comb honey supers for $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$ sec., nailed and painted, no disease, 62 cts. each or \$60.00 for the lot. Also one 4-frame Root extractor, \$30.00. All good as new. T. C. Asher, Brookneal, Va.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—One thousand bee hives with supers. Three-fourths dovetailed. Balance halved together at corners and nailed both ways. Hoffman frames thruout. We will guarantee them to be sound and free from disease. Will sell all or any part at about one-half what new hives will cost. Apply to The Hyde Bee Co., Floresville, Tex.

\$30,000 worth of Bee Supplies all boxed, ready to ship at once; 275,000 Hoffman frames, also Jumbo and Shallow frames of all kinds, 100 and 200 in a box. Big stock of Sections, and fine polished Dovetailed Hives and Supers. I can give you big bargains. Send me a list of what you want. I can save you money. Will take beeswax in trade at highest market price. Charles Mondong, 146 Newton Ave., N., Minneapolis, Minn.

WANTS AND EXCHANGES

Edison phonograph, records, and cabinet, to exchange for bees. E. W. Armstrong, Wichita, Ks.

WANTED.—300 all-zinc queen-excluders 14x20 or larger. F. W. Lesser, East Syracuse, N. Y.

BESWAX WANTED.—For manufacture into Weed Process Foundation on shares. Superior Honey Co., Ogden, Utah.

BEES WANTED.—From 1 to 200 colonies, within 200 miles. Also second-hand apiary equipment. John E. Geiger, Syracuse, Kansas.

WANTED.—1 to 100 strong colonies of Italian bees in 10-frame dovetail hives. Bernard Benzinger, Beckman Terrace, Summit, N. J.

WANTED.—Bees in eight or ten frame hives, free from disease. Particulars. J. F. Garretson, Bound Brook, N. J.

WANTED.—Barnes foot-power circular saw, second hand. Give description and price in first letter. D. C. Noble, Columbia City, Ind.

WANTED.—To buy bees in Southwest or work apiary on shares. Give particulars. 575 Box 1291, Tucson, Ariz.

FOR SALE or exchange for wax, one Root mill, for thin or extra thin foundation; also 1800 $3\frac{1}{2} \times 5 \times 1\frac{1}{2}$ sections and about 500 fence separators for same. G. W. Belden, Berkshire, N. Y.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

WANTED.—By experienced and competent beekeeper, apiary of not less than 200 colonies in good location in north east states to run on shares. I can furnish excellent location if desired. Write for particulars. Address care of Gleanings. 198

WANTED.—50 colonies of bees in 10-frame hives, delivery about May 1st. Must be free from disease. G. Herrick, 12110 Parnell Ave., West Pullman, Ills.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slungum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

PARTNER WANTED.—I would furnish site, with large live oaks for shade and also some cash, to experienced high-class beekeeper with little money who is willing to act as partner in fine white-clover section. No bees here, except few colonies. Write quick for immediate preparations for start. Mention qualifications, etc.

C. M. Elfer, St. Rose, Louisiana.

AUTOMOBILE REPAIRS

AUTOMOBILE owners should subscribe for the **AUTOMOBILE DEALER AND REPAIRER**; 150-page illustrated monthly devoted exclusively to the care and repair of the car. The only magazine in the world devoted to the practical side of motoring. The "Trouble Department" contains five pages of numbered questions each month from car owners and repairmen which are answered by experts on gasoline-engine repairs. \$1 per year. 15 cents per copy. Canadian subscriptions \$1.50. Postals not answered. Charles D. Sherman, 107 Highland Court, Hartford, Conn.

REAL ESTATE

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C. W. Phelps & Son, Binghamton, N. Y.

Hardy northern-bred 3-banded Italian queens. June 1, untested, \$1.00 each; \$9.00 per doz. A. E. Crandall & Son, Berlin, Conn.

Vigorous prolific Italian queens, \$1; 6, \$5, June 1. My circular gives best methods of introducing. A. V. Small, 2302 Agency Road, St. Joseph, Mo.

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Try **ALEXANDER'S** Italian queens for results. Untested, each, 75 cts.; 6 for \$4.25; \$8 per dozen. Bees by the pound. C. F. Alexander, Campbell, Cal.

Write for prices on bees and queens in pound pkgs.; also 2-fr. nuclei.

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"**SHE SUIT ME**" Italian queens; \$1.00 from May 15th to Oct. 15th.

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Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolans. Tested, \$1.00 each; untested, 75 cts. each. Bees per lb. \$1.50; nuclei, per frame, \$1.50. Send your order for bees early.

C. B. Bankston & Co., Buffalo, Leon Co., Tex.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money refunded by first mail. 1000 nuclei in use. Tested, in June \$1.75; untested, \$1.00; in July, \$1.50 and 75 cts. Postal brings circular.

John M. Davis, Spring Hill, Tenn.

THREE BANDED ITALIANS ONLY; queens, packages and nucleus, untested queens each, \$1.00; 6, \$4.25; 12, \$8.25. Write for prices in larger lots, also nucleus and pkgs. Booking orders now. If you consider quality, pure mating and low price, I am your queen-breeder.

H. G. Dunn, The Willows, San Jose, Calif.

I can spare several hundred pounds Italian bees with fine young Italian queens, in one or two pound packages, delivery in June and orders booked now, no deposit required. Safe arrival guaranteed. Price: One 1-lb. pkg. and queen, \$3.00; ten or more, \$2.80 each. One 2-lb. pkg. and queen, \$4.50; ten or more, \$4.20.

J. B. Hollopeter, Rockton, Pa.

Bright Italian queens, ready April 15th, \$1.00 each. Safe arrival guaranteed. Write for prices of larger quantities.

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J. B. Brockwell, Barnetts, Va.

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FOR SALE.—April the 15th is the date on which we can ship you the best three-banded bees and queens on the market; we have been in the bee business continually for twenty-four years and have been striving to secure the best three-banded bees which money could buy and skill produce, all these years. Judging from the many letters we have received from satisfied customers, we have succeeded in our efforts. We believe we can furnish you with the best honey-gatherers to be found anywhere. You will find our nuclei better filled with bees and brood than any other nuclei you can buy. All our bees are on standard, wired, Hoffman frames; full sheets of foundation. File your orders now, sending money when you want the bees shipped. Satisfaction and safe arrival guaranteed. We quote you without queen, as follows: Three-frame nuclei, \$2.50; two-frame nuclei, \$2.00; one-frame nuclei, \$1.50; three pounds bees, \$3.50; two pounds bees, \$2.50; one pound bees, \$1.75. If queen is wanted with bees add price of queen wanted. Young, untested queens, \$75 cts; young, tested queens, \$1.00.

The Hyde Bee Company, Floresville, Texas.

HELP WANTED

WANTED.—Experienced bee-man for next season. State terms. R. S. Becktell, Rifle, Colorado.

WANTED.—Man to take care of bees and work on small farm. F. J. Rettig, Wabash, Ind.

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The Stover Apiaries, Mayhew, Miss.

WANTED.—Experienced, capable bee-man. Permanent position. Give reference, state wages.

W. J. Stahmann, Clint, Tex., El Paso Co.

WANTED.—Middle-aged man with some experience to work in bees, season 1918. State age, wages and experience in first letter.

Frank Alexander, Delanson, N. Y.

WANTED.—A good reliable man to work on farm and help in bees. State wages and qualifications in first letter. Address

E. G. Shearing, Buhl, Idaho, Route 4.

WANTED.—Position by young man, age 24, in nearby or southern states as student helper in large apiaries. Have had some experience with bees. Please state wages in first letter.

Henry Eggers, Eau Claire, Wis., R. F. D. 1.

WANTED.—A practical beekeeper to care for 400 colonies of bees; run for comb honey, season of 1918. State wages wanted, experience, etc.

Wm. Lindenmeier, Jr., Box 464, Ft. Collins, Colo.

WANTED.—Good temperate man to work with bees or poultry, 100 feet house-apary. Shares or salary. Good place for man who can make it pay.

Wm. Robinson, 206 No. 9th St., LaFayette, Ind.

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WANTED.—Man of good habits, to assist with 1000 colonies of bees and small farm. Good chance to learn. State age, experience, and wages expected.

N. L. Stevens, Venice Center, N. Y.

WANTED.—Young man to assist in caring for 600 colonies run for extracted honey; must have some experience; board and room furnished. State age and wages.

B. B. Coggsall, Groton, N. Y., Rt. 12.

WANTED.—For the honey season of 1918, two students of good clean habits, willing and able to work. Board given, and more if conditions are favorable.

R. F. Holtermann, Brantford, Ontario, Canada.

HELP WANTED.—A good reliable man to work on a small farm and help take care of 400 swarms of bees. Would lease the complete outfit to responsible party. Good locations for all the bees. Address S. R. Stewart, Newcastle, Colo.

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TRADE NOTES

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R. H. SHUMWAY, Rockford, Ill.

Our Food Page—Continued from page 92.

bake about 20 minutes. Serve from the baking dish with a spoon.

CORNMEAL MUFFINS.

- | | |
|-------------------------|---------------------------|
| 2 cups cornmeal | ½ cup sweet milk |
| 1 teaspoon salt | 2 eggs |
| 1 tablespoon shortening | 2 teaspoons baking powder |
| 1¼ cup boiling water | der |

Sift together the cornmeal and salt, and add the shortening. Scald with enough boiling water to moisten (about 1¼ cups) and then add ½ cup sweet milk. Beat out any lumps and then beat in the yolks of the eggs. Fold in the stiffly beaten whites, sift in the baking powder, and bake in well-oiled muffin-pans in a very hot oven. This will make one dozen muffins.

CRACKLINGS CORN DODGERS.

- | | |
|-----------------|--------------------------|
| 2 cups cornmeal | 1 cup chopped cracklings |
| 1 teaspoon salt | 1¾ cups boiling water |

Pour over the cornmeal and salt enough boiling water to make a stiff dough, about 1¾ cups. Set aside to cool and swell. When cold add the cracklings; shape into very small oblong pones and bake in a moderate oven 25 minutes, or until brown and crisp. These are very rich in fat, and should be eaten without butter.

POTATO BISCUITS.

- | | |
|-----------------------------|---------------------------|
| 1 cup freshly mashed potato | 4 teaspoons baking powder |
| 1 cup flour | 1 teaspoon salt |
| 2 tablespoons shortening | |

Add melted shortening to mashed potato. Mix and sift flour, baking powder and salt, and cut into potato mixture with a knife. Roll out, cut with a biscuit-cutter, and bake in a hot oven.

Meat Substitute Dishes.

BOSTON ROAST.

- | | |
|-----------------------------|----------------------------|
| 2 cups navy or kidney beans | 2 teaspoons salt |
| | ½ cup liquid |
| 1 cup bread crumbs | 1 tablespoon chopped onion |
| 2 cups grated cheese | |

Soak beans 12 hours or longer. Cook until soft. Drain; put thru food-chopper; add onion, cheese, crumbs and enough of the water in which the beans were cooked to moisten (about half a cup). Form into a loaf and bake in a moderate oven 40 minutes. Baste occasionally with hot water and fat. This should yield ten servings. Save the bean liquor that is left for soup. It contains valuable food elements.

BEAN LOAF.

- | | |
|-----------------------------|----------------------------------|
| 2 cups lima beans | 1 tablespoon meat drippings |
| 1 cup bread crumbs | |
| 4 tablespoons peanut butter | 1 tablespoon dried celery leaves |
| 2 tablespoons grated onion | 2 teaspoons salt |
| | ½ teaspoon pepper |
| | ½ cup liquid |

Soak beans over night and cook until tender, about 45 minutes. Drain and when cool, chop coarsely. Add crumbs mixed with seasonings and peanut butter, then add bean liquor or rice stock enough to moisten, and

(Continued on next page.)

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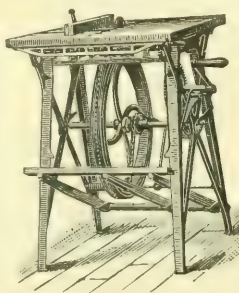
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Our Food Page—Continued from page 119.

melted fat. If dried bread crumbs are used in either of the above recipes more liquid will be needed. Put into greased bread-pan and bake about 30 minutes in a moderate oven. This should yield eight servings.

SPANISH BEANS.

- | | |
|-----------------------------|--------------------------------|
| 2 cups kidney or navy beans | ½ cup pimiento or sweet pepper |
| 2 cups tomato | 2 tablespoons drippings |
| 1 cup finely cut onion | 2 tablespoons flour |
| 1 tablespoon honey | 1 tablespoon salt |

Soak beans over night and cook until tender. Drain, and add sauce made as follows: Put fat in frying-pan; add onion and chopped pimiento, and fry until tender, but not brown; add flour, and stir until smooth. Add the salt and tomato sweetened with honey, and boil five minutes. Pour over the beans and simmer ten minutes.

Sugar Substitute Recipe.

HONEY DEVIL'S FOOD CAKE.

- | | |
|--|---------------------------|
| 1 cup honey | ¾ teaspoon soda |
| 3 tablespoons melted-butter substitute | ½ cup sourmilk |
| | ¼ teaspoon salt |
| 2 squares Baker's unsweetened chocolate. | 2 teaspoons baking powder |
| | 1 2/3 cups flour |

Blend the melted-butter substitute and the honey; add the chocolate, which has been melted over hot water, and beat smooth; break in the egg, and beat again. Add the sour milk alternately with the flour in which the soda, salt and baking powder have been sifted. Beat well and bake in a rather slow oven. Measure the flour after once sifting.

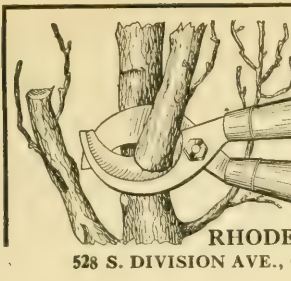
All measurements level.

BOOKS AND BULLETINS

THIRD ANNUAL REPORT OF THE MINNESOTA STATE INSPECTOR OF APIARIES.

A report that is something more than the usual collection of dry statistics is that of State Apiarist Chas. D. Blaker to the Governor of Minnesota, for 1917. Mr. Baker rightly points out in his introduction that producing the largest possible crop of honey is like purchasing a Liberty bond. While one is aiding the government he is at the same time making a good investment for himself.

All beekeepers are urged to familiarize themselves with the characteristics of each disease. American four brood is more likely to appear in the stronger colonies first, since it is most generally carried by robbing, and strong colonies are more apt to rob than weak ones. In case of European foul brood the weak colonies are more apt to be attacked first. It is pointed out that black and hybrid bees are much more likely to be attacked by European foul brood than are Italians, and, inasmuch as this disease has secured a firm foothold in Minnesota, all who



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Books and Bulletins Continued

have blacks or hybrids are urged to requeen with leather colored Italians as soon as possible. The hopeful and truthful statement is made that if one uses vigorous Italian stock and gives careful attention to his bees, his apiary will be practically immune from European foul brood. Italian queens can be secured from the University Farm at St. Paul where the queens are reared under the supervision of Prof. Jager, chief of the Division of Bee Culture.

The last Minnesota legislature increased the annual appropriation for deputy inspection work to \$1,500. This becoming available Aug. 1, made it possible for the department to plan for more extensive work in the future. Out of 711 apiaries visited, 136 were found to be infected. Fifty-seven of these apiaries had to be visited a second time, making 768 visits in all. The total number of colonies in the apiaries visited was 11,895. Out of this number 673 were found infected. Six deputy inspectors put in a total of 179¾ days. There were also four others who put in a total of 143/5 days. The expense of all the inspection was \$971.75.

The three recognized brood diseases are fully described and recommended methods of treatment given, and then follows a report of the county beekeepers' associations by Prof. A. W. Rankin, president of the Minnesota association.

A beekeeping survey has been under construction by L. V. France, instructor in bee culture at the University Farm at St. Paul. In this survey Mr. France estimates from the reports that about 65 per cent of the bees in Minnesota are black or hybrid stock. For the winter of 1915-16, 10 per cent was the winter loss experienced by 190 apiarists that reported. Eighty-one per cent of the 190 beekeepers reported, winter their bees in the cellar only; 9.7 per cent winter outdoors only; 8.7 per cent winter both in the cellar and out of doors. Of the 6,733 colonies reported, only 6.1 per cent were wintered in the open. Mr. France calls attention to a map which will be ready in one or two years' time, giving the good and poor bee territory of the state with locations already stocked, those partially open and those entirely unoccupied. He rightly says that any one wishing to keep bees or moving to an-



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Books and Bulletins—Continued

other location will find such a map very valuable.

The report closes with the Minnesota law relating to bees, especial attention being called to Section 7, which is as follows:

VIOLATION A MISDEMEANOR.—Sec. 7. Any person who shall sell, barter or give away or remove to another location without the consent of the inspector any bees, honey or appurtenances from an apiary known to be infected with contagious disease, or having done so either with knowledge or in ignorance of its condition, shall refuse to give the name and address, if known to him, of the person to whom the same was disposed of, or who shall import into the state any bees infected with disease, or who shall cause other bees to become exposed to infected comb, brood, honey, beehives or other appurtenances so infected, or who shall after knowledge thereof conceal or neglect to report to the state inspector the existence of disease in any apiary owned by him or within his charge, or who shall refuse to permit or to assist in the inspection and necessary treatment or destruction of his brood, bees, honey or appurtenances, or who shall impede or hinder or obstruct an inspector in any of his duties shall be guilty of a misdemeanor and liable upon conviction to a fine of not less than twenty-five dollars (\$25.00) nor more than fifty dollars (\$50.00), or to imprisonment in the county jail for not less than thirty nor more than sixty days.

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AROUND THE OFFICE

M.-A.-O.

[N. B.—Don't anybody read this dep't who's liable to get their feelin's hurt and then jump onto my back for it. My poor old back has got enough onto it now and some more.—M.-A.-O.]

This here around the office department of mine has been wanderin' some lately. For a fact, it's been concernin' most everything but the office. Epileptic cats, fishin', potato diggin', potato neglect, skunks, Ab. Lutz and injuries to my face, don't look much like office affairs to me now as I look back on 'em. They don't seem to be very invitin' subjects, either. But I am for mental freedom and liberal expression, as you all know, and I don't spend half of my time harnessin' my mentality and putting in the other half goin' around and askin' people if they like it. I am either fishin' or doin' somethin' else I like to do or else insurin' agin things as they be. Of the three, I prefer fishin'. The last of the three ennumerated makes me the most trouble. But lump 'em all three together and practice 'em faithfully, and you'll get more fun out of life and do less general injury than President Wilson, Reed Smoot, Dr. E. F. Phillips or even one Mr. E. R. Root, Esq., of Medina, Ohio. You will so, especially if you lay emphasis on fishin', and remember what old man Seneca said long ago, viz.: The least bit more than enough that a man has is just a burden onto him.

Well, I see I am wanderin' off the subject again, which was to be a little more about skunks. I hate to own up that I don't clean a subject clean up as I go along. But there is considerable about a skunk that don't clean up very fast if you go deep into the subject. Anyway I am finding out, too, that this skunk subject is a pretty broad one. I have also got in some later returns on Mel Pritchard as a skunk specialist and odorless operator. Mel didn't send 'em in.

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The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid

Dealers everywhere

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where the good beehives come from.

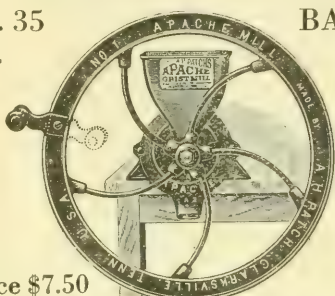
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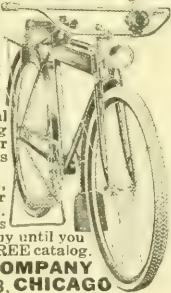
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Around the Office—Continued

So far as I can find out, Mel don't report anythin' only successes in his skunkology experimentae. Praps he thought this particler time was a success. I don't know about that. I feel pretty nigh certain the old skunk must have regarded it in the light of somethin' like success. I would have if I had been in her place. The eye witness who told me about it seemed to lean toward allowin' the skunk as havin' as good as half the argument at least. But praps if I'd shut up my advance introductory yap about it and tell you folks the cold facts you could judge for yourself. I guess I'll try that. The facts are these: A year ago last summer, it seems Mel got the skunk breedin' beetle into his head. Anyway, he found a old mother skunk and five little ones somewhere around his diggins, and without lettin' the skunks have very much to say about it one way or another, he shut 'em up tight in a old chicken coop and began supportin' 'em there out of his own funds. This didn't look like any more freedom for the skunks, and the neighbors began hearin' talk and romancin' about a skunk farm and fur raisin'—that it went right along with the queen rearin' and apiary success, for if he interned skunks in chicken coops on his skunk farm he would know they weren't lunchin' on bees and young queens continuous from sunset to sunup. So Mel, his neighbor tells me, figgered on a double wallop agin the skunks when he began farmin' 'em—he'd take their bee lunches away from 'em during the summer and a little later on he'd take their skins away from 'em, too. It wasn't much he was goin' to do to the skunks up in his region, was it? Mel ain't cruel, either, but from this it seems he's a calullatin' cuss. But one thing he didn't calculate on. That was, the old skunk gettin' out of her coop in the day time and goin' on the rampage. No, sir, he didn't. For you know, Mel's odorless recipe of pick-'em-up-by-the-tail-before-they-think ain't guaranteed to work well only after dark and when you've got the skunk mentally stampeded and optically blinded with an electric flashlight leveled into said skunk's eyes. A loose, clear seein' skunk in the day time, it seems, is somethin' different to Mel from an electric blinded skunk at night. Anyway, he proceeds different. The fact is, I can't get any satisfyin' proof that Mel tries his own odorless system ever when he's alone and is tryin' to play the game safe. He's great on recommendin' it to his neighbors, tho, and he'll try it to show off, if he's got some ignorant, undersized, inexperienced, young skunk electrically twisted. So, as I was sayin', the old she skunk's breakin' out unexpected in the day time put it up to Mel different. But he didn't propose to give up skunk farmin' and wealth via the fur route just because the female head of his herd was found unexpectedly surgin' loose around his old straw stack. He'd cage her,

Queens

Bees by the Pound

Queens

Three-banded and Golden Italians. The best of either. They are hustlers—gentle to handle, cap their honey white, are very resistant to European foul brood. We have added B. M. Caraway's queen-rearing outfit to ours; also have with us one of his assistants, so we hope to fill all orders promptly. We had fine success last season shipping bees by the pound in our newly devised shipping-cage, a number of shipments going as far as Idaho and Wyoming. Mr. R. B. Millis, Corinth, N. Y., wrote, "Bees arrived in fine shape; not 50 dead bees to the cage." 2-lb. size. Satisfaction and safe arrival guaranteed. Reference: The Guaranty State Bank, Robstown, Texas, or The City Nat. Bank, Corpus Christi, Texas.

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Select Tested	2.50	11.50	20.70	74.75	138.00
Bees, 1-lb. package.....	1.75	9.80	18.40	74.75	138.00
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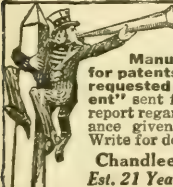
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HANDY TUBES
A HOUSEHOLD NECESSITY

Around the Office - Continued

even if her wings weren't clipped, he would. She'd got to be outgeneraled and, as I say, Mel wasn't for pickin' her up odorless. He figured he and his reputation as a odorless operator weren't bein' seen. There's a lot of us do things different, back of the straw stack back of the old barn from what we do 'em on the rostrum of the farmers' institoot or before a beekeepers' convention. So, Mel, right then and there got up the worn-out dishpan method of catchin' loose skunks in the day time. Praps he wouldn't have been able to get it up so quick if a old, worn out, rusty dish pan hadn't been layin' right out there by the straw stack. Mel knew, too, that action was what was needed after his wanderin' skunk could sasshay off under the barn. Bonyparte saved a whole battle once by just crackin' the ice in a river with cannon balls. Just so Mel grabbed up that old dishpan quick, and, as Mother Skunk went agoin' around the straw stack in one direction, he ambushed hisself on the other side, the dishpan raised high up and ready to clap down on her. In the course of time she came along to where Mel was camouflashed (I like big words when I can get holt of 'em new)—camouflashed, I repeat, under more or less loose straw. Down came the old dishpan over her kerflop, and, to make sure it staid down, Mel came down on it strong with both hands. He also simultaneously kept on coming down thru the top of it, that is, both his hands did and the front forepart of his countenance. Thoroly rusted tin ain't for pouncin' on if you want to stay up on top. This wouldn't have been so bad, tho, if the proceedin's in general hadn't seemed to annoy the old mother skunk considerable, and if Mel hadn't got his hands, the skunk and the rusted tin so mixed together they wouldn't come apart no way. She began resentin' it her

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Around the Office—Continued

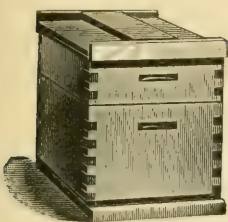
way right sudden, too, and this resentment
of hers filled the dishpan and anythin' con-
tiguous to the same full up and overflowed
into the next township some. His neighbor
says when Mel got his countenance dis-
connected from the general situation he
pointed it straight out mostly in the direc-
tion of fresh air, and his earnestness in
separatin' his hands from mixed tin and
skunk made the best efforts of any dog with
a can tied onto his tail seem like nothin' but
inaction.

I don't know as there is any use in linger-
in' any longer around this scene. Mel did-
n't. He called out from the barn window
a little later on to his wife for a complete
change of clothes, shoes and all. He also
ain't got no skunk farm, and whilst I would-
n't say this incident done it, yet to this day
if Mel comes sudden onto a piece of rusted
tin he shys way off to one side just like a
scared horse.

The lastin' moral I extract out of this
dishpannin' of skunks is, if you are goin'
to clap somethin' down on top of somethin'
else that's likely to make a offensive smell
if it gets out, be sure your clapper ain't
rusted any.

And now, right onto the top of what I
have hinted about Mel's lackin' some skunk
expertness sometimes, think of W. H. Mills
of Arden, Nebr., coming right out and tell-
in' me by letter that Mel doesn't know any-
thing about skunks. He did just that, and
I am goin' to print it right here, whether
Mel ever speaks to me again or not. Here
is what Mills says: "M.-A.-O.:—Your skunk
story is all right in part. You are right as
to the skunk's destroying and weakening a
great many bees. They do that. They also
destroy thousands of nests of bumble bees;
also a great many ground nesting birds. In
giving Mel Pritchard's mode of killing
skunks, when you got to the main point you
fell off. You said that Mel said when his
neighbor got the skunk carefully lifted from
the ground by the tail, that he should hit
the skunk on the head. That shows that he
does not know anything about skunks! If
he had said, 'Now hit him a smart blow
across the small of the back,' then there
would have been no smell. I have picked
up skunks by the tail and put them in a
sack and carried them home on horseback
and they did not stink. I have kept skunks
and raised lots of them and they are the
easiest and gentlest animals to work with
that I ever saw. I have trapped 160 skunks
in one fur season. I have never yet found
it necessary to make a very great fuss about
skunk odor. It is something like bee stings
—it don't amount to anything after you get
used to it."

That's right—when a feller's down every-
body pile onto him. Lambaste him while
the lambastin's good. Dr. Miller has his



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31 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. . . .
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Around the Office—Continued

"opinion of any one indulging in such language." Good old Mr. Nelson from away up in Centralia, Wash., sends along "the thought of foolishness is sin," Provs. 24:9, and some last-judgment considerations that ain't pleasant to me. The Roots take their regular mornin' and evenin' exercise on my back. There's more like 'em, too, that don't seem to think I've got any feelin's that weren't made to be tromped on by anybody any time. But there are some good fellers in the world just the same. They ain't all for makin' me miserable here and burnin' me hereafter. Oscar Brandt out at Muscatine, Ia., put in a word for me with the Roots. E. G. LeStourgeon of San Antonio, Tex., sends this word: "Darn the censors, anyway. If this censor thing keeps up, I'll become pro-German or anti-Root or something just as awful." He also sends real sympathy on my side of gettin' potatoes in late and nobody's business. I'm goin' to take to that man LeStourgeon if he stays on my side. There's some more good Samaritans that have written me and I am keepin' every one of their precious names separate from any of the rest of the Root business. They are too good to get mixed up that a way.

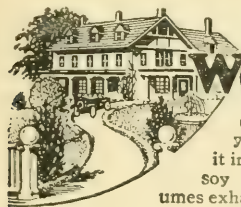
Mt. Pleasant, Ala., Dec. 30, 1917.

"Dear M.-A.-O.:—I had wanted to ship a car of bees this spring, and was just thinking how thick a screen would be, and that it took 700 screens for a car of bees,

and, if they were stacked up together in one pile, the pile would be nearly 70 feet high. As a car is only eight feet high at the highest part I would like to know where I would put the bees after I got all these screens in the car, provided I got them in the car.—Jos. S. Schott." That's easy, Joe. Lower the car floor and knock the roof off.

In a lucid interval of mine last year I said somethin' sensible oncet. It was about a beekeeper and his wife at Brownstown, Ind., who from 23 colonies of bees had sold enough honey durin' the season of 1916 to send their oldest boy to college. I said somethin' about his learnin' more than football, cigarettes and a college yell. Those bees have grown to 46 colonies now, and they are keepin' that boy in college yet and doin' somethin' besides. The boy is doin' his part, too, his grades bein' pretty nigh perfect.

Roy L. Johnson of Groveland Sta., N. Y., wrote me a sort of philosophisin' letter. I owed him and finally paid him all up when he wrote this: "Time is passing swiftly by whether our debts are paid or not." That sentiment is all o. k., Roy, but I've noticed time when it didn't slip by so durnd fast when I owed a man and he was present and continuin' to be present and insistin' on talkin' about it. I rather be fishin' myself. That's when time slips by just a-whoopin' with me.

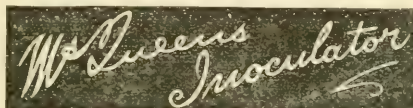


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on your farm depends upon the richness of your land in nitrogen. Nature's way is to put it in the ground through leguminous plants—clover, soy beans, alfalfa, vetch, etc. Uninoculated legumes exhaust the land—naturally inoculated legumes enrich it.



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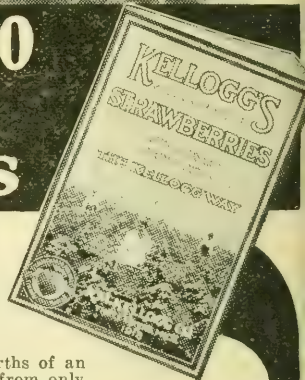
W. L. Forbes

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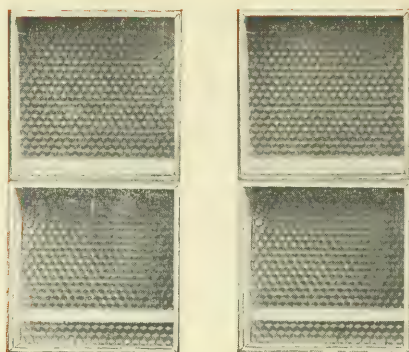


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BETTER THAN TEN — MEN WITH HOES

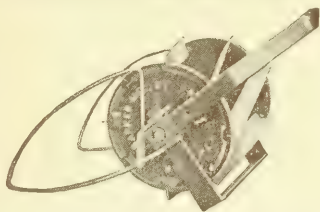
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"Barker Mfg. Co., David City, Neb. Dear Sirs:—I have received the Weeder which you so kindly sent us for demonstration work. I have given it a try out and like it very much. It is the best of any that I have ever seen. I am very glad to have this on the Farm and will take pleasure in recommending it to any one who desires a weeder.—T. S. Parsons, Agronomist, University of Wyoming, Agricultural College and Experiment Station, Laramie, Wyo."

Scores of others have written us praising the BARKER.

Send Now for our free garden book and factory-to-user offer.

BARKER MFG. CO., Dept. 10, David City, Neb.



Thousands of BARKERS now in use—in market gardens, on farms and in cities and towns.

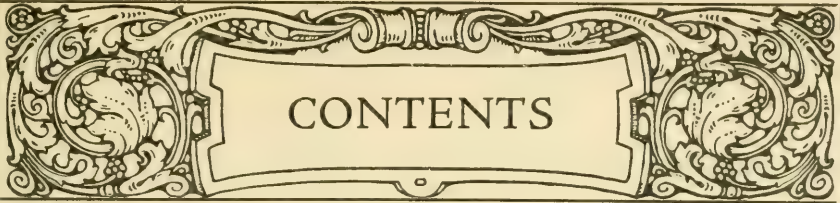
BEEKEEPERS KEEP IN TOUCH WITH

Leutzing & Lane, San Francisco, Cal.

236-238 Drumm Street

Buyers of EXTRACTED and COMB HONEY
Shippers and Exporters of HONEY

The WORLD is our market



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SUBSCRIPTION RATES.—One year, \$1.00; two years, \$1.75; three years, \$2.50; five years, \$4.00. Canadian subscription, 30 cents additional per year, and foreign subscription, 60 cents additional. **DISCONTINUANCES.**—On and after March 1, 1917, all subscriptions, not paid in advance, or specifically ordered by the subscriber to be continued, will be stopped on expiration. No subscriber will be run into debt by us for this journal. **CHANGE OF ADDRESS.**—Give your old address as well as the new and write the name that appears on the paper. **REMITTANCE.**—Should be sent by postoffice money order, bank draft, express money order or check. **CONTRIBUTIONS** TO GLEANINGS columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. **ADVERTISING RATES.**—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. **ADVERTISERS' RELIABILITY.**—The publishers use utmost diligence to establish in advance the reliability of every advertiser using space in this journal. Entered as second-class mail matter at the Postoffice at Medina, Ohio. Published monthly.

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

E. R. ROOT
Editor

Editorial Staff
A. I. ROOT
Editor Home Dept.

H. G. ROWE
Managing Editor

We offer you even better service
than ever before at our new loca-
tion.

Come in and see us.

Have you receiv-
ed our new cata-
log?

Write for our
1918 Bee Catalog
now.

SUGGESTIONS

For the Wide-awake Beekeeper of Today

If you hired a carpenter to repair your barn, and he arrived without his tools, he could not give results even if he were the best carpenter in the country.

It goes without saying that you, a beekeeper, must look to the future or the hon-ey season will be on and your needed supplies will be tied up in some freight car—**EMBARGOED.**

Order from us **NOW** allowing for slow freight deliveries and your supplies will reach you in plenty of time.

Old Comb

Ship your old comb and cappings to us for rendering. We charge you 5c per pound for the wax rendered and pay you the highest market price.

Wax and Honey

We always buy Comb and Extracted Honey as well as Beeswax, so when you have the above to offer, write us and you will be well pleased.

FOUR REASONS FOR OUR SUCCESS

**HONESTY
QUALITY**

Lewis' Beeware

If you have used LEWIS' BEE-WARE, you know the quality, if not this is just the time to invest your money where the results are lasting.

"Made Like Furniture"

**PRICE
SERVICE**

**DADANT'S
FAMOUS
FOUNDATION**

**R O O T ' S
SMOKERS and
EXTRACTORS**

The **Fred W. Muth Co.**

214 Walnut St., Cincinnati, Ohio

"Quality Counts With Us."

Bee-hives

This winter has demonstrated the fact that Buckeye double-walled hives are best — warmer in winter, cooler in summer — cost more, and are worth it. Ask us about them.

Service. .

We are prepared to make immediate shipments, but railroad service is slow. We advise you to anticipate your needs and ORDER EARLY.

Beeswax.

We are paying 40c cash and 42c in trade for average beeswax delivered to Lansing. Send us your shipment.

Catalog .

Send for our 1918 catalog. We wish to quote you either on Beginners' Outfits or on additional equipment.

M. H. Hunt & Son, Lansing, Mich.

General Agents in Michigan for Root's Goods

BEE-SUPPLIES

Read Order Early

Owing to the congestion of freight and embargoes we caution all beekeepers to get their order in early, otherwise you will suffer a great loss when you actually need goods, and you perhaps will be unable to get them for the above reasons. We have a large stock on hand, and can fill orders promptly, provided the railroads will accept freight.

Send for Our New Catalog

C. H. W. Weber & Co., Cincinnati, O.

2146 Central Avenue

NOTICE

Beekeepers' Supplies

We are now located in our new plant equipped with the latest machinery for making supplies. Write for catalog, which will be ready for mailing in January.

We Can Save You Money

no matter how large or how small your order is. A trial will convince you. Quality first.

We also render your wax from old comb and cappings. Our charge is only 5 cts. per pound for the wax rendered. Our steam press extracts every particle of wax possible to get.

Give us a chance to bid on your wants. Write for catalog today. All correspondence cheerfully answered.

The M. C. Silsbee Co., Avoca, New York

"Griggs Saves You Freight" — TOLEDO, O.

Say Mr. Beeman, do you realize the Spring Rush will soon be here? Are you prepared to do your share of doubling the Honey Crop of 1918 for Uncle Sam? Do you realize that freights are moving slowly, and that the situation will get worse as the season advances? ORDER SUPPLIES EARLY. Don't put off ordering your supplies a minute longer, or you may be one of those who will be without supplies when the season arrives.

NEW STOCK NOW COMING IN. We will soon be well stocked with new Root goods. Electric lines are quicker and cheaper than steam roads, we can serve you as no other firm is able to do. But remember, during war times necessities must move first, and already some steam roads have embargoes on such goods, and we must have your goods packed ready to go when same is lifted, which is only a few days at a time.

Send for New 1918 Catalog of Root's Supplies, and Price List of Feeds for Poultry, and also Bees and Queens. We can usually ship Bees and Queens any time after May 10th. Honey and Beeswax always wanted. Write us.

S. J. GRIGGS & COMPANY

DEPT. No. 25

"Griggs Saves You Freight"

TOLEDO, OHIO

SUPERIOR FOUNDATION

"Best by Test"

Present heavy orders demand utmost capacity production. Your foresight now will fortify you against delayed shipments and advanced foundation prices later in the season. . . . Special prices on request.

Old Combs Rendered on Sharss

Get our terms for manufacturing your own beeswax into foundation.

Superior Honey Company, Ogden, Utah
(Manufacturers Weed Process Foundation)

HONEY MARKETS

There is so little honey left in either the hands of the producers or of the jobbers, that quotations are practically little more than estimates of what honey would bring if it were on the market in appreciable amounts. We have received from several large wholesale firms "what quotations would be if there were any honey on the market."

The middle of February, we knew of one carload of extracted honey in five-gallon cans, held by a producer in the Middle West, who was holding for 20 cents, f. o. b. his railroad station. At the same time, one carload of Western honey was offered to New York at 18½ cents, f. o. b. shipping point. Still another car was just recently sold by one of the oldest and largest shippers in the West at 16½c. So it is fair to infer that the price of white extracted honey is practically 18-19 cents.

The price of fancy or No. 1 comb honey is as high as the man who holds it can get—but there is very little held anywhere. One big dealer in the East, when asked (since Feb. 1) what price should be quoted on comb honey said: "I don't know, but the price is blamed high." He also said he would not know where to go to find a thousand pounds of it in the hands of producers.

The prospect of early California honey coming onto the market soon to relieve the shortage is very dubious. Northern California has this season had very little rain and Southern California almost none. Beekeepers there despair of a sage honey crop, and because of drouth the honey conditions of California are the worst at this writing (Feb. 20) in many years.

About Feb. 1 there was for 10 days a decided slackening in demand for honey in the Eastern markets. What was the cause of this? There are some shrewd friends of honey who say the price has been ballooned too high for the future good of the market. Their point is that present unprecedentedly high retail prices of honey will serve to place it on the luxury list in the public mind and it will remain there when normal sugar prices have returned. These friends of honey urge that this was the time when honey dealers, big and little, should not have joined in a wild scramble to "get rich quick," especially those large dealers who bought at wholesale prices that would have warranted a lower retail price to the consumer than has prevailed during the last winter. It is maintained, with very considerable reason, that the last six months was the time to demonstrate honey as a staple food and not to advertise it as a luxury.

A word about how Gleanings quotes the honey markets may just here be pardoned the Editor.

The honey market, during the past season, has been not only higher but more exceptional and more affected by divers factors than ever before within our experience. It

may be the same sort of market again the coming season—especially if the world-wide war continues into another fall and winter. We do not know but that the price of honey may reach a higher level in 1918 than in 1917. It is quite possible. We are not certain, too, that the price of honey may not go down in 1918—for two reasons mainly: a possible ending of the war, and an increased supply of sweets. We don't know—and we don't pretend to know, and we say so frankly in our honey market reports. In discussing the honey market from month to month, we are careful not to advise the honey-producer either to let go of his crop or to hold onto it. We try to tell him the exact market situation, as best we can get it, but we leave him to decide for himself when to sell and at what price. We will not take that heavy responsibility altho we may be criticised for not doing so. Why we refuse to advise when to sell and when to hold honey is illustrated exactly by what has happened to the potato market during the last several months. Farmers in our part of the country, who could have got \$1.60 and \$1.75 per bushel for their potato crop last fall right from the field, were given a great deal of wise advice to hold their crop—a good deal of it printed advice. These potatoes today are worth only about \$1.00, and going lower. We don't need to point the moral, except to say that if we could foretell honey prices and other prices with super-human certainty, we would tell Gleanings readers in advance about honey prices and advise them what to do—we would also go on the Chicago Board of Trade and get rich.

Below we quote the wholesale price (the price to the retailer—not the price paid by the wholesaler to the producer) as sent us by various large city dealers; also the latest quotation received by us from the U. S. Government Bureau of Market honey prices:

General Quotations of Wholesalers.

[These firms are asked to quote the wholesale prices they make to retailers. Accordingly, their prices must be figured at least one profit higher than the price paid the producer. The large dealers do not quote prices in print that they will pay futurally to producers.]

KANSAS CITY.—There is very little comb honey coming in, but what we are getting is selling at \$5.00 per case of 24 sections. The receipts of extracted honey are very light, selling from 16½c to 18c a pound, according to quality and color. Beeswax is selling at 39c a pound.

C. C. Clemons Produce Co.

Kansas City, Mo., Feb. 15.

ST. LOUIS.—Our market is practically bare of comb honey and very little extracted honey now in the jobbers' hands. Demand would be good for fancy or ordinary comb honey, if stocks were available. Extracted honey, light amber, in cans, 17-18c; amber, 15-17c. Clean, average yellow beeswax, per lb., 38½c.

R. Hartman Produce Co.

St. Louis, Mo., Feb. 15.

CHICAGO.—Receipts continue to be light, probably owing to the severe cold weather of the past month which has practically prohibited shipments of comb honey. The best grades of white comb continue to bring 25c per lb., with off grades selling at 20c per lb. and above. Extracted, white grades, 17c to 18c per lb., according to kind and quality.

Ambers 15c to 16c per lb. Beeswax 37c to 40c per lb., according to color and cleanliness. All receipts are finding a ready market.

Chicago, Ills., Feb. 17. R. A. Burnett & Co.

SAN FRANCISCO.—Very little to offer in extracted honey. There is, however, some Australian honey coming in a few days, attracted here by the high prevailing prices, and indications are that a considerable quantity is available from the "Kangaroo" country and there will probably be some arriving during the next three months. The lack of ship space, however, may cut down shipments somewhat. Australian export honey, 17-18c.

Leutzinger and Lane.

San Francisco, Calif., Feb. 13.

DENVER.—No more comb honey in the market and only sufficient extracted to supply near-by trade. Extracted honey, white, 17c; light amber, in cans, 16c. We pay for clean, average yellow beeswax, per lb., 38c cash, and 40 cents in trade, delivered here.

The Colorado Honey Producers' Ass'n.,
Denver, Col., Feb. 16. F. Rauchfuss, Mgr.

PORTLAND.—Very little comb honey in the market; demand only fair; stocks light. Only small lots of extracted honey being offered. Comb honey, extra fancy, per case, \$4.75; fancy, \$4.50; No. 1, \$4.25; No. 2, none. Extracted honey, white, 18 to 20c; light amber, in cans, 16 to 18c; amber, none. Beeswax, none offered.

Portland, Ore., Feb. 11. Pacific Honey Co.

PHILADELPHIA.—We are entirely out of fancy comb honey. Since last quotation, have received a few small lots of light and amber and No. 1 white, medium weights, 10-11 oz. selling 22-23c, case count. Trade is quiet. No extracted to offer.

Philadelphia, Pa., Feb. 15. Chas. Munder.

CLEVELAND.—Our market is practically bare of all grades of comb honey and we can only quote prices it would probably sell for, as follows: Comb honey, extra fancy, per case of 24 sections, \$6.50; fancy, \$6.00; No. 1, \$5.50; No. 2, \$4.50.

Cleveland, O., Feb. 15. C. Chandlers' Sons.

SYRACUSE.—Our market is practically bare of honey. Neither is there more than a light demand for comb or extracted at present. We have practically cleaned out our stock and have nothing to offer.

E. B. Ross.

Syracuse, N. Y., Feb. 16.

BUFFALO.—Market bare. No honey offered. There is considerable demand.

Buffalo, N. Y., Feb. 15. Gleason & Lansing.

MONTREAL.—Stocks getting very light. Comb honey, extra fancy, 24c; fancy, 23c; No. 1, 22c; No. 2, 20c. Extracted honey, white, 22c; light amber, in cans, 21c; in barrels, 20c; amber, in cans, 19c; in barrels, 18½c.

Gunn, Langlois & Co., Ltd.

Montreal, Can., Feb. 15.

TORONTO.—Stocks of honey on this market are practically exhausted. The 10-lb. tins are selling today at \$2.50 per tin.

Toronto, Ont., Feb. 15. Eby-Blaine Limited

HAMILTON.—Received a shipment of 10-lb. tins of clover honey this week; otherwise market is bare. No comb honey. Extracted, per lb., in 10-lb. tins, 22c.

F. W. Fearman Co., Ltd.
Hamilton, Ont., Feb. 15.

CUBA.—Extracted honey, light amber, in barrels, \$1.60 per gallon; amber, in barrels, \$1.60 per gallon. Clean, average yellow beeswax, per lb., 37c.

Matanzas, Feb. 13. A. Marzol.

LIVERPOOL. (Delayed).—Since our last report the market has become still firmer with a good demand, and we quote good quality extracted honey at 26 to 28c per lb. and beeswax at 48c per lb. We give details of the value of various foreign honey in our local market as follows: Jamaica, 295 barrels sold at \$34.75 to \$35.25 per cwt (112 lbs.); Cuban, 110 barrels fair quality have been sold at \$38.25 per cwt.; Chilian, 700 barrels have been

sold at from \$30 to \$34.75 per cwt., according to quality. Stocks of Chilian 1st hands, 1,025 barrels against nothing last year. The market for beeswax is still quiet. We quote for Chilian, \$55.10 per cwt. (112 lbs.); West African, \$48.15 per cwt.; Cuban, \$53.75 per cwt.; Abyssinian and East African, \$52.50 per cwt. Taylor & Co.
Liverpool, Eng., Jan. 7.

U. S. Government Market Reports.

(The prices quoted in this report represent the prices at which the "wholesale carlot receivers" sell to the "jobbers." Arrivals include receipts during preceding two weeks. Prices represent current quotations.)

St. Louis.—Comb honey: no supplies. Extracted: supplies light; cans, bright amber, 16-18c per pound; dark amber, 15c.

Denver.—Comb honey: receipts very light. Extracted: approximately 27,000 pounds arrived. Comb honey: supplies practically exhausted; no sales reported. Extracted honey: demand and movement good, white to light amber 16-17c per pound. Beeswax: receipts light; price to producer, yellow, 38c per pound.

New York.—Arrivals: 30 barrels, 25 casks, Porto Rico; 3 barrels, Santo Domingo, 675 barrels, Cuba; 177 barrels, Chile; report probably incomplete. Local demand moderate, market steady; export demand good but hard to secure ship space. Extracted honey: domestic, light, best 20-22c per pound; West Indian, light, 19-20c; dark 17-18c per pound. Beeswax: 104 bags, 12 boxes, Porto Rico; 5 bags South American arrived; demand good, market strengthening; West Indian, yellow, 39-40c per pound; dark, 37½-38½c.

Cincinnati.—Extracted honey: 1 California arrived; local receipts very light; demand good; market firm; movement moderate on account of high prices. Domestic, light amber, 17-18c; orange and white sage, 22c. Comb honey; supplies practically exhausted; demand and movement good, market strong; fancy white heavy, \$5.50; No. 1 white heavy, \$5.25 per 24-section case. Beeswax: demand and movement good, market strong; average yellow, 43-45c per pound.

Chicago.—No fresh carlot arrivals; receipts very light; supplies very light; stock from nearby states. Comb honey: best 23-25c per pound. Extracted honey: best, 17-18c per pound.

Philadelphia.—360 cases comb from Vermont arrived; practically no demand or movement; market very strong; very few sales. Comb honey: Vermont, amber, \$5.00 per 24-section case; dark amber, \$4.75. Extracted honey: no arrivals; no sales reported. Beeswax: no arrivals, no sales.

Kansas City.—No carlot shipments arriving; demand limited; movement slow; market strong; few sales; all sales in small lots. Extracted honey: jobbing prices, California and Colorado, white and light amber, 17-18c; dark, 14½-15½c. Comb honey: sales direct to retailers, California, 24-section cases, No. 1, \$5.50; native, 24-section flat cases, No. 1, mostly \$6.00. Beeswax: no fresh arrivals; buyers paying 35-40c per pound.

Minneapolis.—No arrivals; supplies very light; demand moderate; market firm. Comb honey: 24-section cases, Minnesota, white, best, few sales, 18-19c; mostly 18c per pound; Colorado, white, mostly \$5.50. Extracted honey: Minnesota, 60-lb. cans, best, mostly 19c per pound. Beeswax: no sales.

St. Paul.—No arrivals reported; supplies very light; demand moderate; market firm. Comb honey: Minnesota, 24-section cases, fancy white, \$5.50; No. 1, mostly \$5.00. Extracted honey: no sales reported. Beeswax, no sales.

Charles J. Brand,
Washington, D. C., Jan. 31. Chief of Bureau.

TRADE NOTES

CALIFORNIA BEEKEEPERS.

In making your arrangements for such supplies as you may need for this season remember we are at your service. In San Francisco, at 245 Mission St., Mr. Rafael, our manager at that office, is anxious to prove his ability to supply your wants so acceptably as to make you want to come again. A carload of stock such as is not yet made in California has gone forward: Hives, frames, cases

and comb foundation are supplied in carload lots by our Los Angeles factory.

At 948 East 2nd St., Los Angeles, you will find at your service an organization which cannot be excelled. Miss Doyle, our present manager, has made many friends and is making more every day. We have here the equipment to serve you to your entire satisfaction. Unexcelled Weed-process foundation is turned out here from your wax, on shares or in any way desired. Honey extractors, machined in the factory at Medina, are here assembled. A carload of these and other goods not made in the West are on the way to supplement another car which went forward earlier.

We are equipped with special automatic machines for frame and hive making, and are prepared with a supply of dry lumber to turn out hives from either pine or redwood. Our frames of pine are more accurately cut on the special double end automatic machines than you can possibly get from mills not so equipped.

Both offices are prepared to supply reliable cans and cases for your honey crop and also to handle your honey when it is ready for market.

Many made the mistake the past season of contracting their crop before it was produced. Wait till the honey is off the hive, then give us an opportunity to prove our ability to dispose of it for you to the best advantage. With service branches in many of the large eastern cities, as well as working arrangements with exporters, we are as well equipped as any one to realize for you all that your honey will bring and will do so. Give our managers a chance to prove the value of our service to you.

EXPORT SHIPMENTS.

In the past few weeks we have sold for export two large cars of honey in one-pound tins and several cars in 60-pound cans. We have also used our section-making machinery for six weeks on an export order for three million sections for use in storing the honey crop of the allies. We have several other export orders which we cannot execute because unable to procure shipping space to get them across to those in need of the goods. More power to the shipping board in the way of more men to build ships not only to carry our men but our goods to the place of need before it is too late.

DOUBLE SCREW WAX PRESS.

We have made up a number of the double screw wax presses described in the February issue of Gleanings in anticipation of calls for such an implement to try out. We have set an introductory price of \$20.00 at Medina. At this writing we have none in stock at any branch office, but there is one in transit to Los Angeles where it may be seen in operation after arrival there. If it proves as successful and rapid in other hands as in the tests made here, it will be regularly offered for sale.

BEE SWAX PRICES.

The market price of beeswax is largely affected by the export demand. Because of shortage of shipping space and very high rates the export movement in recent weeks has been light. As a result we have bought several large lots of wax from exporters at lower prices than those named in the last issue. Under these circumstances we do not look for any higher prices soon and do not recommend holding for better prices. For the present we will continue paying for average wax delivered in Medina, 38c cash, 40c trade.

ROOT'S GOODS IN IOWA.

The Farmers' House of Poultry in Des Moines, Ia., becomes the distributor of Root's goods in Iowa. They take over the agency for the state from the branch office which has been maintained there for the past nine years. Previous to that time the business was built up by Joseph Nysewander. Mr. H. A. Wilkinson is the principal owner of the Farmers' House of Poultry. His place of business has been the rendezvous of poultry keepers for some time and monthly meetings have been held by those within easy reach. Similar meetings of beekeepers are planned. We trust this new agency will receive the continued patronage of our Iowa customers. They have a well assorted stock to care for your needs and are at your service.

MARKET CONDITIONS AND PRICE PROSPECTS.

The market price of lumber of various kinds continues to advance, making inevitable still higher prices on hives and other supplies made of wood. How soon these advances will come depends on several conditions. With a supply of lumber on hand to cover ordinary requirements for the season, we do not look for an immediate advance. Since there is no prospect for lower prices, the wise and forehanded beekeeper will without unnecessary delay place his order for such equipment as he expects to use. This will still be a wise precaution even before knowing whether or not the bees come thru the winter safely. If there should be a heavy winter loss and not all the supplies needed this season, they will be a good investment to carry over till another season rather than take chances of then paying still higher prices.

The A. I. Root Co.

BANKING BY MAIL AT 4%

What Can I Do to Help Win the War?

That question is uppermost in the minds of every true American today.

If you cannot join the colors you can draft your spare dollars by depositing them BY MAIL in this bank and thus help conserve the resources of the nation—moreover you receive 4 per cent compound interest.

Start mobilizing your dollars this very day in a Savings Account in this bank—deposits may be safely sent in the form of check, draft, money order or the currency by registered mail.

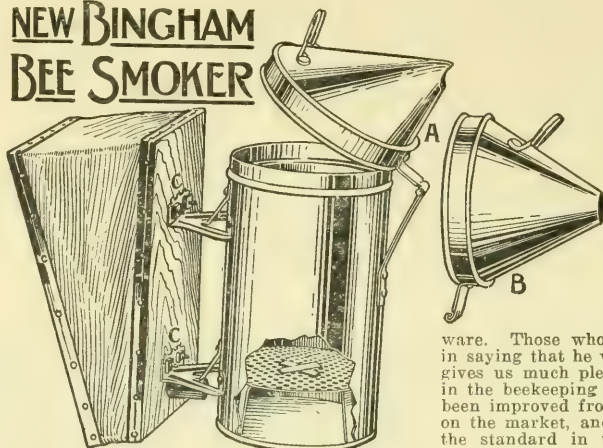
Write for detailed information concerning our plan of BANKING BY MAIL at 4 per cent.

**THE SAVINGS
DEPOSIT BANK CO.**
MEDINA, OHIO

A. T. SPITZER, Pres.
E. R. ROOT, Vice-Pres.
E. B. SPITZER, Cashier.

ASSETS OVER ONE MILLION DOLLARS

NEW BINGHAM BEE SMOKER

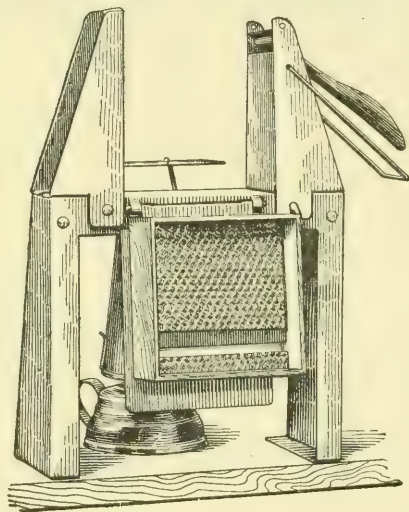


In 1878 the original direct draft bee smoker was invented and patented by Mr. T. F. Bingham of Michigan. Mr. Bingham manufactured the Bingham Smoker and Bingham Honey-knife for nearly thirty-five years; and in 1912, becoming a very old man, we purchased this business and joined it to our established business of beekeepers' supplies and general be-

ware. Those who knew Mr. Bingham will join us in saying that he was one of the finest of men and it gives us much pleasure to help perpetuate his name in the beekeeping industry. Bingham smokers have been improved from time to time, are now the finest on the market, and for nearly forty years have been the standard in this and many foreign countries. For sale by all dealers in bee supplies or direct from the manufacturers.

Smoke Engine, 4-inch stove.....\$1.25
Doctor, 3½-inch stove..... 1.00
Two above sizes in copper, 50 cts. extra
Conqueror, 3-inch stove..... .85
Little Wonder, 2½-inch stove..... .65
Hinged cover on two larger sizes.
Postage extra.

Woodman's Section-fixer



A combined section press and foundation-fastener of pressed-steel construction. ONE OF THE GREAT ADVANTAGES this machine has over all others in the market, in the putting in of top and bottom starters is, YOU ALWAYS HANDLE LARGE PIECES OF FOUNDATION. You know how hard it is to set small narrow pieces for bottom starters. With this machine a large piece of foundation is set and the hot plate is again used to cut it off, leaving the narrow bottom starter. What is left of the large piece is then set for the top starter. THIS IS THE ONLY MACHINE ON THE MAR-

KET, from which the section always comes away right side up, with the large piece or top starter hanging down. It does not become loosened in reversing as with other machines.

Price of machine \$3.00, with lamp, \$3.40. Weight 5 lbs.; postage extra.

Tin Honey-packages

Our three-year contract is enabling us to make prices considerably under general market quotations. Let us hear from you, specifying your wants.

FRICTION-TOP TINS

	2 lb. cans	2½ lb. cans	3 lb. cans	5 lb. pails	10 lb. pails
Cases holding	24	24	...	12	6
Crates holding	...	...	...	50	50
Crates holding	100	...	100	100	100
Crates holding	603	450	...	203	113

SIXTY POUND SQUARE CANS

We are now booking orders and making shipments of 60-lb. cans from several different factories about the country. We believe it would be a wise idea to secure your supply early, as we have been told that the supply of tin plate will not take care of the demands. Ask us for prices, stating quantity wanted.

A. G. Woodman Co., Grand Rapids, Michigan

Now is the Time to Prepare

The largest stock of The A. I. Root Company goods are here ready for shipment. It will be no use to urge beekeepers that wait till a new swarm clusters on a tree to order early, but if you are in need of goods next June we will ship promptly at that time as well as now. It is up to the railroads to make prompt delivery. We will care for you the best we know how whenever you send in an order. Catalogs for 1918 are now ready, and a copy will be mailed on request. Better send for one and make out your order today.

F. A. Salisbury, Syracuse, N. Y.

1631 West Genesee St.

Save Time -- Save Honey

An article in a recent business magazine gave the details of a saving plan instituted by a factory employing 2000 men. By installing time-saving machinery the firm figured that it saved one hour's time of all its employees each week, or 2000 hours per week for the factory.

This, when totaled for the year, amounted to over \$30,000 saving, a sum which more than paid for the small amount of machinery required to start the time-saving plan.

You are the Honey Factory Manager Your Bees are the Employees

They have a very short working season. All the more reason that you should save every minute for them while there is honey in the field to gather.

If you can cut down the time required for them in the hive to build combs by a few hours, you can increase their output just that much. And you can do that very thing---Anyhow, others do it. Read---

As far as I am concerned your Foundation is in a class by itself, and the bees are of the same mind, as I have tried putting one of your sheets on one side and other makes on the other side of the cluster, and they took to yours like ducks to water.

WALTER H. LEONARD,
Jan. 24, 1918. Raynham Center, Mass.

When you place your order for foundation with your supply dealer insist that he send you DADANT'S. If he won't furnish it, there are plenty of dealers who will. Or order of us.

Dadant & Sons, Hamilton, Illinois

P. S.---Conservation should be your watchword. Save every scrap of old comb, scrapings, etc., and when you have 25 pounds or more send it to us. We can convert it into DADANT'S FOUNDATION for you.

GLEANINGS IN BEE CULTURE

MARCH, 1918

EDITORIAL

IT IS NOW authoritatively announced by the U. S. Food Administration that beekeepers



**Sugar for
Feeding Bees
Now Assured.**

are to be allowed the sugar necessary for feeding their bees. This announcement is

made in the following public bulletin just issued, signed by C. W. Holman, the official in charge:

The Food Administration, trusting in the industry of the bee, has decided that even in the face of a world sugar scarcity bees are entitled to their share. Beekeepers throughout the country have been reporting to the United States Food Administration their inability to secure sugar with which to prevent starvation among their colonies. Last season was a particularly unfavorable one. Owing to droughts and failure of clover and other crops in some sections, the bees were unable to store sufficient food to carry them thru the winter. Under such conditions a syrup made from white granulated sugar is needed to feed them. Any other kind of food, except when bees are flying frequently, tends to produce a condition of the bees known as dysentery. But some dealers fearing they might violate rules or at least the spirit of the Food Administration, have hesitated to deliver sugar to beekeepers. In handling this problem the Food Administration has not only authorized but encouraged the delivery to beekeepers of a sufficient quantity of sugar to meet urgent bee feeding requirements. Dr. E. F. Phillips, Apiculturist of the United States Department of Agriculture, estimates that every pound of sugar now fed to starving bees will result in the production of at least 10 pounds of honey next season. In many cases the increase will greatly exceed this. C. W. Holman.

We interpret this official bulletin to mean that the beekeeper in need of sugar to feed his bees can show a copy of this bulletin to his nearest wholesaler or retail sugar dealer, and, upon satisfying the dealer that he is a beekeeper in need of feed for his bees, can get all the sugar he wants, provided the dealer has the sugar. More than this, we interpret the bulletin to mean that the wholesaler or retail sugar dealer can secure an extra allotment of sugar for supplying the beekeeper. We suggest that the beekeeper's demand be made as moderate as possible and to cover only actual necessity of certain colonies that are running short of stores. One or two pounds of sugar per colony will probably tide them over until fruit bloom or other source of honey. If necessary later, more sugar can be obtained for feeding purposes.

In case sugar cannot be obtained of your

local dealer, write to Gleanings and we will try to tell you how to proceed and where you can get the sugar. But impress upon your local dealer the fact that he will be allowed a special allotment of sugar for the use of beekeepers and that he can get it for you on this claim if he will.

Elsewhere in this issue will be found full directions for making candy for feeding providing the weather is cold. In case the bees can fly two or three days a week, ordinary thick sugar syrup should be given.

In case your dealer can not supply you with sugar and the weather is warm enough so bees can fly two or three times a week, cane molasses may be given, and there is no doubt that the permit as above given would authorize the distribution of molasses or any other form of sweet.

In a few localities maple sugar or maple syrup can be given to bees. The ordinary evaporated maple syrup is nearly equal to granulated sugar syrup.

In case sugar has to be obtained from a distance, where the quantity is not large, we would advise having it sent by parcel post. Go to your local postmaster and have him tell you how much extra you will have to send to cover postage from dealer to you. Sugar should be furnished probably at the prevailing rates, somewhere around 9c or 10c a pound.

It is perhaps unnecessary to remind our readers that a severe punishment in the way of fine and imprisonment will be meted out to anyone who buys sugar for feeding bees and then uses it for other purposes. For that reason no more sugar should be purchased than is absolutely required for the purpose of feeding.

Later.—Some press notices seem to indicate that there will be plenty of sugar within the near future; but from an interview that the editor of Gleanings had with the Ohio Department of the U. S. Food Administration at Columbus, on Feb. 16, we are convinced that there will be a sugar shortage in many states lasting till the next honey flow, and that some definite arrangements should now be made to divert sugar exclusively for the use of beekeepers to some central point in each state. With that end in view, we made arrangements with the Ohio Food Administration, Sugar Division, to buy some 7,000 pounds of sugar. This

sugar is to be placed in the hands of the secretary of the Ohio State Beekeepers' Association, Prof. Jas. S. Hine, of Columbus. While this amount of sugar may not take care of Ohio beekeepers, more can be secured, doubtless, if needed. Prof. Hine has kindly consented to disburse this sugar to beekeepers who make application direct to him, care of the Ohio State University at Columbus, in amounts equal to a pound of sugar per colony, for only such colonies as are actually running short of stores. The sugar will be furnished at cost, plus wrapping and postage when sent by mail, but cash in every case must accompany the order. Beekeepers within reach should go after the sugar by train, by trolley, or by automobile. On account of the congestion of freight or express, the sugar may have to be obtained thru parcel post, if the beekeeper cannot secure it in person. If the sugar is needed at once, don't order by freight or express. Go after it or have it sent by parcel post. Your postmaster can tell you how much extra remittance to make for postage.

It is to be remembered that sugar from Columbus (diverted for beekeepers' use by the Ohio Department of the U. S. Food Administration) can be furnished to Ohio beekeepers only. Each state must take care of its own beekeepers, as we now understand it. But what Ohio has done other states can and should do at once. The Editor of *Gleanings* expects to go to Washington on a special trip to see if some similar arrangements can not be effected with every state in the Union where there is any considerable number of beekeepers needing sugar. In the meantime you are urged to write to the state division of the U. S. Food Administration at your state capital to furnish you sugar for your immediate needs. If you can not make satisfactory arrangements locally, write to us. We may (or may not) be able to help you—but we will try to do so.



MANY COLONIES went into winter quarters last fall short of stores on account of



Winter Feeding and Disturbance.

the fact that it was impossible to get sugar just before the bees were put away for the winter. There are hundreds and perhaps thousands of beekeepers who fear that even before spring some of their colonies will starve, and they would like to feed them during mid-winter. There are others who hold that winter disturbance will do more harm than good; that opening up a colony during mid-winter will so arouse it that it would not get back to normal and the result would be dysentery by spring.

Feeding sugar syrup during mid-winter or cold weather would be worse than useless as it should only be given when the bees can fly, once or twice a week. Hard candy, or, in fact, any kind of candy, is better to

give a colony of bees in winter or early spring than syrup. The best food of all is frames of natural sealed stores. During cold weather a comb of such stores, if necessary to give, should be laid flat on top of the brood nest, because it is not advisable to break the cluster. Whether a comb of natural stores or a cake of candy is given, the feed should be put on top. A couple of cleats of wood should be laid across under the comb or candy, and a couple on top, after which the packing is put over.

Almost any candy can be given to bees, but the hard candy that has given us the best results is that made from granulated sugar, and nullomoline, which is an invert sugar having a composition quite similar to that of honey. The object of using this invert sugar is to prevent the candy from scorching. It can usually be obtained from the Nullomoline Co., New York, but when for any reason it cannot, the same recipe may be employed by using at least four parts of sugar to one of water. This candy is made as follows:

The sugar used in this recipe is composed of 1 part of nullomoline to 12 parts of granulated sugar. Into a dish of hot water on the stove slowly pour and constantly stir as much of this mixed sugar as will readily dissolve before boiling commences (about four to one). If any remains undissolved, it is likely to burn, injuring the flavor of the candy and thus causing the bees to have dysentery later. The sides of the vessel should be wiped off frequently to prevent particles of candy from hardening there and scorching. If one has a candy thermometer, bring the temperature to 275 degrees. If no thermometer is available, watch the candy very closely, testing frequently by dropping a very little of the syrup into cold water (about 50 to 55 degrees F.). When the boiling has continued long enough, the drop of candy, after cooling in the water, should be hard and brittle when taken out; but when placed in the mouth it should soften slightly. When the right stage is reached, pour the syrup immediately into paper plates or other paraffined or waxed dishes that hold the required amount for one feeding, making the cakes about $\frac{1}{4}$ inch in thickness. When cold the candy should be amber in color, hard and glassy, and perfectly transparent.

A regular fondant, using glucose and powdered sugar has been recommended by Dr. Gates of the apicultural school at Amherst, Mass. This is generally known thruout New England as Fuller's candy. It is made as follows:

Take of granulated sugar 12 lbs.; glucose, such as the candy-makers use, $1\frac{1}{2}$ lbs.; water, $1\frac{1}{4}$ quarts; cream of tartar, $\frac{1}{3}$ teaspoonful. The cream of tartar, water and glucose are put together in a kettle and heated. As soon as the mixture comes to a boil, the sugar is added little by little until it is all incorporated. During the process of adding the sugar the candy is continually

stirred. When the boiling-point is reached again, the stirring is discontinued. When the temperature reaches 238 by a candy-mixer's thermometer, the mixture is removed from the stove and allowed to cool. When it cools to 120 it is stirred again until it begins to "cream." As soon as it looks like paste or starch, it is ready to use.

In case the beekeeper is unsuccessful in securing sugar, either with or without a permit from the Food Administrator of his state or other official source, he may be able to get common cane molasses, or, he may be able to purchase a cheap candy. In either case, such food should not be given unless the bees can fly at least twice a week. By the first of March the bees will be able to get out of the hives occasionally in most of the Northern localities.



THE CONTINUOUS cold winter that has prevailed thruout the eastern section of the



Some Warnings and Suggestions.

country and Canada and as far south as Florida, has caused considerable apprehension among beekeepers.

Where colonies were put in single-walled hives in the northern states and left outdoors the mortality will be considerable. On the other hand, where the bees have been put in cellars, or been well packed outdoors, the losses will probably not exceed that of former years, providing there are sufficient stores to carry them thru until spring, and providing also that their entrances have not been clogged with snow and ice.

In the states south of the Ohio river, where bees are left outdoors in their summer hives without packing, the estimated mortality will be from one-third to one-half. In the states bordering the Gulf and southern sections of the United States the losses will be heavy in bees and brood. While these losses may not involve colonies, they will reduce the strength of them so that they will be in bad condition to breed up in the early spring. Should this be true, it will be unfortunate because the demand for bees in package form will be the largest this year that has ever been known in history, and there is a possibility and probability that our Southern breeders will be seriously handicapped in supplying the demand. This would mean they would have to cancel some orders and possibly delay others that they do fill.

Thruout the Northwest bees are wintering well, as the winter has been very mild. As the West provides the great bulk of carload shipments, Western honey will be very much in evidence this coming summer, whether clover honey is produced in the East or not.

The great danger in the East from wintering this year, especially in case of no upper ventilation, will be due to shortage of sugar to feed, and to entrances clogged with ice or snow. At one of our yards during a severe snow storm the entrances of some of the colo-

nies were filled full of snow and sleet. The warm breath of the bees thawed this, and then the snow water froze, sealing the entrances hermetically. Out of 70 colonies at one yard 19 were found dead where the entrances were thus sealed. At most of the other yards wintering up to date, Feb. 7, appears to be excellent. Colonies in DeMuth packed hives are showing up well, as well as those in the Government winter-packed cases. The latter have the decided advantage over the DeMuth in that the entrances do not clog with ice. The summer stand entrance catches snow which melts and then freezes. The Government winter cases, four colonies to the case, have their entrances about eight inches above the ground with no ledge to catch the snow or ice, with the result that these entrances are free from ice and snow.

In most cases, colonies in good cellars will winter well. The danger will be that the low temperature outside will cause a great drop inside the cellars, in which case there will be more or less dysentery and consequent loss.

The great danger that confronts every beekeeper this winter is shortage of stores and the difficulty of securing sugar to feed in the spring. The reader is requested to see editorial on this subject on the first editorial page.

Later.—Since writing the foregoing, we have gone over all our bees, and, except for those at the basswood apiary, where there was a heavy windsweep that filled the entrances with snow that froze, we had very little loss—not exceeding two per cent, with the rest of the bees in good condition. Reports of other beekeepers in the locality are equally good. We have also had some reports from the extreme North and West, which indicate that the winter losses are not going to be nearly as heavy as was at first feared. A report from south of the Ohio river shows that the losses will not be above normal, altho it was feared they would go above 50 per cent. Fortunately, warm weather came on Feb. 14, in the nick of time to give the outdoor bees in the country a flight. The weather map shows that this warm spell was general thruout the Northern and Eastern States. This, of itself, will be worth many thousands of dollars to the beekeeping industry.



FROM PRESENT indications, there will be a large business in combless packages of



Getting Bees Out of Pound Packages.

bees this coming spring. Even among the larger beekeepers there have been heavy losses which

must be replaced before the opening honey-flow. Ordinarily one is able to buy from neighboring apiaries; but this year many of the small beekeepers will be entirely eliminated as far as selling any bees is concern-

ed. Therefore, the large as well as the small beekeeper will soon be re-stocking his apiary with combless packages of bees. To insure best results from these packages certain precautions should be taken.

If the bees arrive at night too late to put them into the hive, paint the outside of the cages with thin sugar syrup. This should be done a few times until the bees have filled themselves. Don't put them in a hot room over night, but keep them in as cool a place as possible.

If the bees arrive during the day they should be released at once into a prepared hive, which should, if possible, contain a frame of brood from some other colony. If brood is lacking, empty combs may be used, or even frames of foundation if nothing better is available. In the latter case it is always advisable to put a piece of perforated zinc or queen excluder over the entrance to prevent the bees from swarming out the next day. In fact, package bees should always have such zinc over their entrance for a few hours anyway, until they become accustomed to their new home. Some pound-package men always supply a piece of perforated zinc with the cage and this can usually be found wrapped with the directions.

To release the bees, apply a little smoke and remove the wirecloth from one side. As a general rule, the bees for several hours show no inclination to desert the cage. Accordingly, as many as possible should be shaken out onto the combs. If free of bees, the cage may be taken away entirely; if not, after closing the hive, the cage may be placed in front of the entrance, leaving the bees to gradually join their comrades in side.

After the bees are in place they should be fed two or three pounds of a thin sugar syrup until they are well supplied; after this about a half pound a day for one or two weeks. Of course, if they arrived during a honey-flow, they might not need feeding for more than two or three days.

If bees arrive in bad condition so that only a few of them are left, their queen should be caged and left in the hive. They should also be given a frame of brood with adhering bees, providing the bees can be obtained from some other hive. If they arrive in good condition, they should be let out into a hive at once, the few dead bees being separated from the live ones.

As soon as possible, one should find the queen to determine whether or not she has arrived in good condition. If found dead, the fact should be reported to the shipper immediately.



SOMETIMES A BEGINNER will look in at the top of an out-door winter colony, and,



When Bees Are Wintering Well.

seeing the bees scattered all over the brood-nest, just as they are in summer, will jump to

the conclusion that the colony is wintering well. If they seem to be pretty lively dur-

ing the midst of severe winter weather, it's a bad sign. A colony that has broken its cluster will be almost sure to have dysentery and die even before spring, or before settled weather comes on so that it can recover itself.

A normal colony that is wintering well outdoors should be in a compact cluster, anywhere from three inches to eight inches in diameter, depending upon the temperature outside and the size of the colony the preceding fall. When the cluster, or ball, of bees seems to be quiet, the condition is favorable.

When the bees are in the cellar they will be in the form of a cluster at the beginning of the winter and gradually expand as spring comes on. If the cellar is very warm, with plenty of ventilation, the bees may be scattered pretty well thru the hive and still be wintering well. Dead bees on the cellar bottom do not necessarily indicate bad wintering, but if there are hives in the cellar stained with brown markings of dysentery near the entrances, such hives should be removed and their bees given a flight. If the bees appear to be uneasy, flying out on the cellar floor pretty often or, if colonies are roaring, it will be well to put all the bees out doors the first warm day that comes. They would do better outside than inside when marks of dysentery begin to show.



LAST SUMMER, owing to the early spring and summer rains, there was a great abundance of clover. This

Honey Prospects. was followed by very dry weather. Had there not been heavy snows early this winter, these young clovers might have died. The fact that practically the whole clover area of the United States has been covered with deep snow for months at a time will probably insure a crop of clover this coming summer. Were it not for the fact that some winter losses are predicted for the eastern states and that surviving colonies will be weak, we would expect a record-breaking crop of clover honey the coming summer, other conditions being favorable. At this writing, Feb. 18, the expected rains for Southern California have not arrived. Unless they come before Mar. 1 there will not be much sage honey. Prospects there are poor.

Conditions in the Rocky Mountain region have been very good for an alfalfa crop. With prospects looking good for clover in the East, 1918 should not fall greatly below former years in honey production, if it does at all.

We are in hopes that the present predictions of winter losses will not materialize in the East, but even should there be a heavy mortality among the bees, there will probably be a good crop of clover honey next season.

If our Southern beekeepers can supply bees in pound packages, the Northern beekeepers will make up for their winter losses by purchasing bees from this source.

IT has been said that bees "work for nothing and board themselves." Sometimes it's true, and sometimes it isn't. If there ever was a man who has worked out that principle and carried it thru to where the owner himself does no work except to take off the honey once a year, it is that original genius, Allen Latham, of Norwichtown, Conn. To say that some of his bees "work for nothing and board themselves" does not tell it. They go further—they give him big crops of honey per colony. If he worked with them, fussing with them almost every day in the summer, then perhaps his yields would not seem so remarkable.

Before we go into details about the let-alone hive, it will be necessary to know something about the man. Mr. Latham is an instructor in science in one of the high schools of Norwichtown, and naturally has a trained mind capable of seeing things from a scientific point of view as well as from a practical. While he has bees in small hives near his home that he works with, on orthodox lines, he has certain small outyards scattered out among the hills around his Connecticut home that are run on the let-alone principle.

I had always had a great curiosity to see those big hives that are run on the long-idea, single-story principle. After attending the field meet in Massachusetts last August I rode with Mr. Latham out to his home. He was "baching" it at the time, as his wife and children were away. He is not only an original genius in beekeeping but in the house as well. If his wife is away, he

THE LET-ALONE HIVE IDEA

*A New Plan Whereby Bees Work
for Nothing and Board Themselves,
as Worked Out by Allen Latham*

By E. R. Root

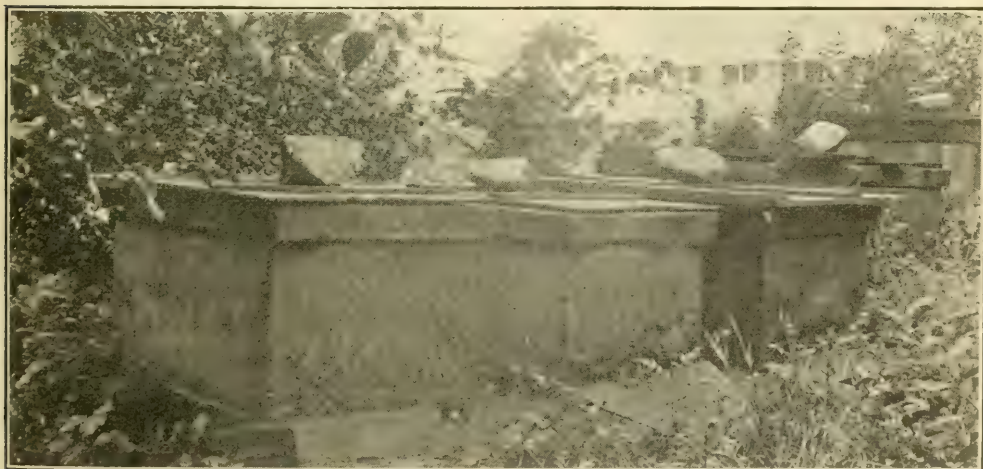
will get up a meal fit for a king. I shall never forget those flapjacks and honey, the kind that cover a dinner plate. If there ever was a time when

I wished that I had three stomachs (and then some more) it was when my host was serving those big pancakes with sumac honey.

A visit to his workshop showed me that if there was ever anything new or old in beedom that this man of science has not tried, I do not know what it is. I do not believe there is a man in all the world who has tested out more contrivances and more methods than this Norwichtown professor. He has some original ideas on shipping bees; but, if he were to tell you just how he does it, you might have to stop and scratch your head, wondering whether he be sane or "a little off." But after you let him explain, you begin to see "method in his madness." As the contrivance may be made the subject of a patent, I will not go into details.

Among other interesting things, he showed me a hive which he makes out of paper and a couple of rims on which the paper is fastened. The cost is insignificant and he knows the hive is good, because he has used it for years.

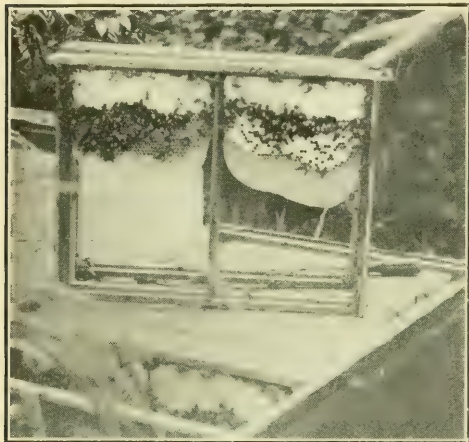
But the thing that interested me more than anything else (to get back to my subject) was that let-alone hive—a veritable barn or warehouse made out of shredded wheat-biscuit cases. It was covered on the outside with builder's paper, and contained some 25 or 30 closed-end frames—the biggest brood frames that I have ever seen—so large, indeed, that they needed a center sup-



(1) A View in Allen Latham's Apiary. Showing the Giant Let-Alone Hives Built of Light Shipping Cases Covered Over With Builders' Paper.

port. The frames, so far from being standard, are made to fit the boxes.

He puts a series of 10 or 15 of these hives on a side hill among the bushes, out of sight. Into each he puts a good swarm of bees and then leaves them for a whole year without going near them. When we called at one of the outyards shown in Fig. 1, consisting of these let-alone barns or warehouses, I ask-



(2) A Big Frame from One of Latham's Let-Along Hives, Showing the Comb Built Downward, and Producing Chunk Honey. The Frame is Made to Fit Crosswise a Shredded Wheat Shipping Box. When the Honey is Cut Out Enough is Left to Serve as a Foundation Starter.

ed Mr. Latham if that was the only visit he had paid during the year. He turned to the man standing nearby, who owned the property, and said:

"Do you remember seeing me around here before, this year?"

"No, sir," was the quick response. "All I know is that you come around about once a year—not oftener."

"Did you see any swarms?"

"No, sir, I never saw any," was the equally quick response.

We moved down to the beeyard and found it located among the bushes, almost out of sight. There may be more "method in his madness" to keep away the naughty boys, and perhaps to secure shade.

"Now, Mr. Latham," I said as I saw the great clusters of bees out in front, "don't you think you have any swarming here?"

"I don't think so," he answered. "Let us look thru the hives and see whether they have swarmed."

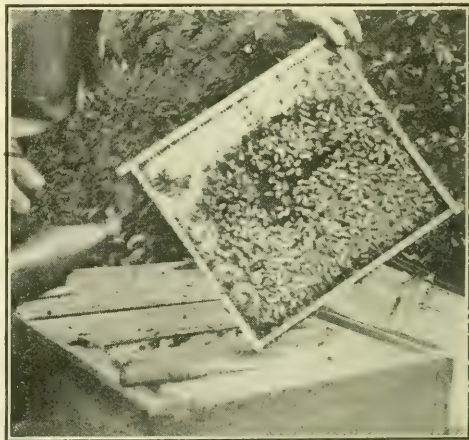
Covers were held down by means of big stones, which he lifted off and then opened up the hives. Sure enough, there were powerful colonies that had evidently begun drawing out combs at the front of the hive, and had kept working backward till they had got clear to the back side. If an ordinarily good working colony has 50,000 bees—well, I should guess those colonies had anywhere from 75,000 to 100,000. That they could

have swarmed and left such a force was impossible. No, they didn't swarm, just as the late Mr. Poppleton said they wouldn't. They had unlimited room, and kept on building more combs as these were needed. In some of the hives we found the bees had quite reached the back side in their comb building.

Mr. Latham does not take the trouble to use comb foundation for the let-alone principle. He merely takes a big knife, cuts out the comb near the top-bar, leaving a starter for the bees to fill in again. He does not bother with any comb-honey fixings nor with the honey-extractor. He simply "robs" these hives in the good old-fashioned way, minus the brimstone, and stores the product in tin buckets for which he finds ready sale. After he has robbed them as far as he dares, he shuts up the hive and leaves them for a whole year. If they die, he has not lost much; and, if they live, he will have a crop of honey. But such colonies will not die ordinarily.

Up among those Connecticut hills, Mr. Latham, like Arthur C. Miller, believes in the principle of having **small** apiaries and **big** colonies. Mr. Miller goes on a somewhat different principle. While he believes in big colonies, he uses Jumbo hives, which he can tier up.

Mr. Latham says that on his principle, and up among the sumacs, he can produce honey for about one or two cents a pound. He figures in his time in making these hives and then starting the bees to housekeeping. After



(3) Frame of Brood from One of the Big Let-Along Hives, Showing the Work of a Good Queen.

that, they must absolutely work for nothing and board themselves. They must do more—they must "divy up" with him. Feed them? No, he does not have time to do that. Besides, they don't need it with their fall flows.

Figs. 2 and 3 show some of his big frames. Fig. 2 shows how the bees build the comb downward, which he cuts out for his chunk

honey. Fig. 3 shows the kind of frames of brood he has, and that, of course, means good queens. Speaking of queen-rearing, Mr. Latham apparently knows every kink in the trade. To make this principle work one must have good queens—no sort of doubt about that—and Allen Latham rears his own good queens.

Our original genius does not care a fig about "orthodoxy." In fact, he rather delights in going off in unbeaten paths; and, if the other fellow does not like his way of doing, he doesn't care.

As I said, Mr. Latham has other hives that

whether Latham is "quite all there." Then, when he explains his idea, you will be able to see there is more "method in his madness." Instead of having the shelves on the inside of the building, they are on the outside. This is where he puts the mating-boxes when raising queens.

Some day I should like to have Mr. Latham tell us something about the experiments he has conducted and the conclusions arrived at. It would take a small volume. A field meet. could be held at his place and beekeepers could learn something, for he certainly knows the inside and outside of



Allen Latham's "Orthodox" Apiary, Located on a Rough, Stony Connecticut Hillside.

he works on the ordinary principle of tiering up when running for comb honey. These hives are not run on the let-alone principle. His apiary, seen in Fig. 4, shows that he is following out somewhat the lines of modern orthodoxy, using ordinary hives and running for comb honey. He can be orthodox or heterodox, or any other "dox," because he has been all.

If I had the space, I should like to describe completely for you his honey-house. If you can imagine a building turned inside out, you can form some idea of what he has. You would look at it and smile, and again wonder

a hive better than most "expert" beekeepers of the country.

It is not much wonder that Allen Latham and Arthur C. Miller of Providence, R. I., are good friends. Every now and then they get together and compare notes, and are often surprised to see how nearly they see things alike. Both believe in big hives and small apiaries scattered at intervals of one or two miles apart. Both drive Ford automobiles to their bee yards, and both get barrels of fun out of the business. One is a banker and the other a teacher, but their common play is beekeeping.



OWING to advance in the greater price of extracted honey compared with the advance of comb honey, many comb-honey producers are turning to extracted. In comparing the price of comb and extracted honey, one should review the last three years. A good price for comb honey, in Colorado, was \$3.00 for a 24-section case. Extracted was bringing six to seven cents a pound. Last year (1917) comb honey brought \$4.00 a case, and extracted brought 12½ to 16 cents a pound. If

COMB TO EXTRACTED HONEY

*Two Contrasting Views Submitted
by Two Prominent Beekeepers from
Two Widely Separated Sections*

comb honey had advanced in proportion with extracted, it would have brought \$6.00 to \$8.00 a case last fall.

I have been a comb-honey producer in the past, but last year I changed most of the equipment for 800 colonies for extracted equipment.

The first question the beekeeper will ask himself, when thinking of changing, will be: "What will it cost to change to extracted honey?" Now, the cost of changing is not nearly so great as many think. If the comb-honey producer has regulation or standard

hives and supers, he can change his comb honey supers to extracted bodies very easily. Take out the inside fixtures of the supers (section-holders, separators, etc.) pack them away for future reference, or better still, use for kindling wood. Then take two supers (just the outside rims) remove the tins, fasten supers on top of each other and you have a good extracted body. In fastening them together you can use cement coated nails, hive staples, or a piece of sheet iron bent around the corners and fastened with screws. I used four hive staples. Have a man, that you know will do good work, put them together, and have him plane off all unevenness so they will fit together tight. If you are intending to stay in the extracted-honey business you had better plane a little from the bottom of the super so that the extracted frames will come down just even with the bottom of the super. This will give the right bee-space between the two sets of combs.

Now you can see that a comb-honey producer will have half as many extracted-honey bodies as he has comb-honey supers. Most of the comb-honey men here in Colorado have three and four supers to the hive, so that will give them about two extracted-honey bodies to the hive, and, if they extract as often as they should, that will be a plenty.

The frames, wires and full sheets of foundation for the extracted-bodies will cost a little more than it would to fill the supers with sections and full sheets of foundation. But remember the next year you will not have this expense, as you will have all your combs for extracting.

Many comb-honey producers have some supers filled with sections and foundation that were not used last year, and they think if they change to extracted-honey production they will lose those. If they will look around, they can sell them to beekeepers that will continue to run for comb honey. Still you can better afford to burn them than use them.

Counting a pound of extracted honey worth the same as a section of comb honey, the cans will not cost as much in proportion to the value of honey shipped as comb honey shipping cases would.

The cost of the extracting outfit or machinery will vary a great deal. I know some extracted-honey producers that do all the extracting for 500 to 1,000 colonies with the two-frame extractor, run by hand, and the cost of such an outfit would be from \$50 to \$75. But some producers have several hundred dollars invested in their extracting machinery. The actual cost of our extracting outfit last year did not exceed \$50. I think a power extractor is the cheapest to buy, and will pay for itself in one season. Help that can be depended upon around the bees is hard to get; but a gas engine does not mind if a bee stings it once in a while.

I do not think the cost of changing the equipment for running 500 colonies for comb honey to extracted equipment would be

more than \$200.00, exclusive of the extracting machinery. When one takes into consideration that the expense will be for the first year only, it is very small. The next year you have all your extracting combs and machinery, so your expense will be a great deal less than if running for comb honey.

Robt. E. Foster.

Boulder, Col.

Owing to new conditions in the marketing and relative prices of comb and extracted honey, this question will no doubt be of considerable interest at the present time. The arguments set forth at the convention held by the Jefferson and St. Lawrence County Beekeepers' Societies held at Watertown, N. Y., will hold good not only in the United States, but Canada, and will be of general interest.

Geo. B. Howe, of Black River, N. Y., opened the question by stating that the selection of comb- or extracted-honey production should in part be decided by the condition of the bees. If colonies are strong and in fine shape, they may be used to advantage for comb honey when it would be unwise to run the weaker for that purpose; and that, once engaged in the production of comb honey, there is a fascination about it that is difficult to overcome. He did not advise radical changes from the production of one to the other. He felt sure that in New York State there would be thousands of colonies starve to death during the present winter.

Charles P. Stewart, of Johnstown, N. Y., one of the efficient inspectors of that state, thought that one should be slow in making radical changes, saying that the man who is equipped for either had better stay by what he is engaged in. If beekeepers make a rush in the direction of producing one kind of honey, the price of that article will likely be depressed and the other enhanced.

D. R. Hardy, of Burrs' Mills, N. Y., who has tried (and usually with success) quite a variety of things, including beekeeping, berry growing, photography and politics, stated that beekeepers should get ready for the coming season now. He strongly emphasized the fact that procrastination is the thief of time and that this is particularly true of beekeeping.

The consensus of opinion at this convention was that it is not advisable under present conditions to rush into extracted-honey production. It is not an easy matter to face the season running for extracted honey without drawn combs; in fact, the bees could produce almost as much comb honey in sections as they could extracted honey if they had to draw out foundation. Again, the swarming impulse would be much greater when the bees had to draw out sheets of comb foundation in the supers instead of having combs. And again, if many beekeepers were to change from comb- to extracted-honey production, a good present market for comb honey might be lost. Several

strongly advised that whatever changes were made should be moderate.

Brantford, Ont. * * * R. F. Holtermann.

[The two parties hold quite opposite views on this vital question. With the former we are in hearty accord; with the New York beekeepers whom Mr. Holtermann quotes, we most emphatically disagree.

When our government bulletins are advising us to stop raising comb honey and expend all our energies in producing extracted, since more of it can be produced, it is not a time to attempt adding a few extra pennies (even if we could) to our coffers, especially when doing so necessitates our snatching the much-needed sweets from a sugar-starved world.

It is claimed that "bees could produce almost as much comb honey in sections as they could extracted honey, if they had to draw out the foundation." Our experience has proven that bees have a decided preference for the large frames over the little square section boxes, and therefore produce much more honey when using the former. In this same connection we note the further contention that "it is not an easy matter to face the season running for extracted honey without drawn comb." Now it just happens that we have some exact data along this very line which seems to show rather conclusively that the difference is not as great as generally believed.

In 1916, we started a small apiary of 33 colonies. All but one of these were supplied with one shallow super of drawn combs and six or seven combs in the brood chamber. The rest of the frames in the brood chamber and the remaining supers were all filled with foundation. This apiary increased about 57½ per cent (the new colonies being given no comb whatever) and made an average of 106 lbs. of honey per colony. In our other apiaries in that same locality we had 190 colonies which increased 41 per cent and averaged 118 lbs. Last year we bought another small apiary of 35 colonies, and, with the exception of one shallow super of combs per colony, they were given foundation entirely and, as usual, no extracting done until the end of the season. This apiary produced no increase, and, it being a poor season, only averaged 48 lbs. per colony. The 265 colonies of the other apiaries of this group also produced no increase and made an average of 44 lbs. of honey per colony.

Further it is claimed that "the swarming impulse would be much greater when the bees had to draw out sheets of comb foundation in the supers instead of having combs." We would expect to find something in this. But for 1916, which was an especially bad year for swarming, and 1917, which was an unusually good one in this one respect, does our record bear out this statement in a very striking manner? But, really, this last quotation hardly deserves to be answered, anyway, for is it not really begging the question?

In changing from comb to extracted, there could arise no question as to whether colonies with frames of foundation would be more apt to swarm than those with combs. The question would be whether colonies with full sheets of foundation would be more apt to swarm than those with sections of foundation? If there is any difference, we are inclined to think it is all in favor of the full sheets.

The New York men's last point is that "if many beekeepers were to change from comb to extracted honey production, a good market for comb honey might be lost." Good! That is just what we want during the duration of the war. That is exactly what the government is working for (now by request, later perhaps by enforced demand). Also this is what every red-blooded American beekeeper ought to be working for.

We are glad to call attention to what Mr. Holtermann himself has heretofore said as to making money the deciding factor in honey production in these days of food scarcity. It will be remembered that he sold his 1917 crop at only ¼ cent advance in price over the crop of 1916, because as he said: "I was utterly disgusted with the grab and greed of the present day," and "I, for one, should I be living that long, want to be able, when the crash comes, to look every one in the face and say, 'I had no part in it.'"

When we recall the many millions of dead over in Europe, especially of old people and children who have starved because of the shortage of food supplies, are there any arguments strong enough to persuade us to raise less food? If so, what would be that all-convincing argument? Money? No, not when beekeepers see the matter in its proper light, or even if they look at it in the light of money only. For, considering the present price of comb and of extracted honey and remembering certain facts given on this page, it will not be difficult to prove that changing to extracted honey will be a good financial venture.

But, as before stated, this will not be the determining factor. The motive that is going to arouse the beekeepers of the land to this desired step may be expressed in one word—patriotism.—Editor]

Another Convert to Extracted.

"I think the comb honey business will have to go. It doesn't pay to monkey with comb honey when the price is about the same as extracted honey. There is only one—the best grade—for all of it; no culls; no bother to keep hives level; not one-tenth the bother to keep bees from swarming; no hurry to sell it before it candies; no danger of the bee moth spoiling it; no trouble to have the bees cap it white; and some clean cash to get from the wax of the cappings. There are all these advantages and more, in producing extracted honey over comb-honey production. So comb honey will be a thing of the past for me at least."

Brush, Col.

Daniel Danielson.

FROM THE FIELD OF EXPERIENCE

AN ASCENDING HIVE

A New Idea in Hive Building and Why One Man Likes It

This "ascending" hive was designed to eliminate the lifting necessary in the use of tiered-up hives, which is trying on all beekeepers and especially so to those of advancing years; also to overcome the objection to the long-idea hive that the bees do not store as much honey in a horizontal hive as they do above. I have experimented enough to prove this.

I had two hives of this ascending pattern made last spring. The two cost \$7.40 complete, painted and crated for shipment.

The last week in May I placed an average colony in each, confined to nine frames. One of the colonies started cells and the other did not, and the yield was as good as any colony in my yard. (Very poor season—35 lbs. average for 112 colonies.)

My ascending hive holds 21 frames, spaced $1\frac{1}{2}$ inches, and stepped $\frac{7}{8}$ in. All makes of frames of Langstroth dimensions can be used, and perfectly spaced by simply pressing them against the steps. It is a pleasure to handle the frames in this hive and it is a great labor-saver.

After the extracting was done I divided each hive with a close-fitting division board, equalized the brood and honey, and gave the queenless part a cell.

This hive will be almost as easy to move as a two-story hive, if the legs are removed and the bodies nested.

It suits me better than any I have yet tried, and I have experimented with Hand bottom boards, Danzenbaker, Langstroth 8- and 10-frame and "horizontal" from 16 to 32 frames. There may be some principle that will condemn it, and I know there is no one better than Gleanings to tell me of it.

Los Angeles, Cal.

Eugene Baker.

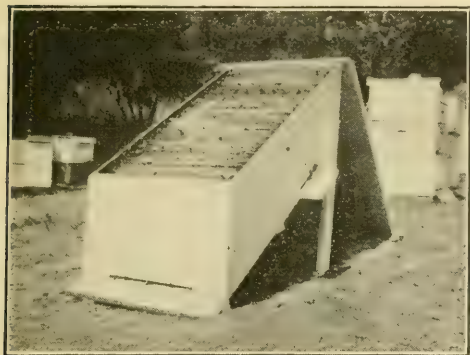
[We have made some tests of the long idea hive, and do not find there is any difference about bees storing horizontally or on a vertical plan, like a sky-scraper, for example. Your experience is somewhat unusual, if you found that bees would not store in a horizontal hive of the "long-idea" principle, as well as in a vertical hive, one story on top of another. The greatest objection we would have to the one that you show is that the rabbet to hold the frames must be in the form of a zigzag, or steps. This would defeat one very important feature of a modern movable frame hive, for in your hive the frames could not be shoved together nor pulled along as a whole. It is very important that the frames be so arranged in the hive that they can be shoved together in lots of three or four. If we understand the principle of your hive, it would be impossible for you to do this without manipulating each individual frame. This would take considera-



View of Eugene Baker's Apiaries, Showing the Standard Ten-Frame Tiering-Up Hive, the Long-Idea Hive and Several of the Ascending Hives.

FROM THE FIELD OF EXPERIENCE

ble amount of time. While the heat has a tendency to rise, the form of hive that you show in the photograph would have the same objection that a vertical hive would have. The lower end of the hive would be cooler than the upper end. The very feature that



An Ascending Hive with the Cover Removed, Showing Frames.

is good in the horizontal or long-idea hive, is that the temperature is the same practically all the way thru it, one end or the other, and the very fact that the hive is large enough to take 10, 12, 15 or 25 frames, makes it unnecessary to have extra supers or do any lifting—Editor.]

POUND PACKAGE EXPERIENCE

Water in Transit Should Certainly be Provided by the Shipper

During the past season I had the privilege of receiving for the Superior Honey Co. of Ogden, Utah, over 1,100 pound packages of bees, shipped to Utah from Texas and other Southern states. This was an interesting experience to me during which I believe I learned a few things that might be helpful to those engaged in the combless-package business another year.

These packages were all shipped when the weather was quite warm, and some when it was very hot. The first shipment was received during the first days of June, and the last about the middle of July. They came from nine different sources and in various styles of cages and methods of shipping. The greatest variance was in the methods of supplying feed. I also had the chance to observe the difference in bees supplied with water in transit and those that were not, that is, bees that were fed candy alone, and those that were fed candy and water; bees shipped with syrup cans instead of queen candy; also bees shipped with pieces of comb-honey for feed. I received bees in small

cages and large cages, and with the exception of 18 two-pound packages they were all one-pound packages.

The fact that over 50 per cent of these bees, taking an average of the whole, were dead when they arrived here (some shipments being all dead) indicates that the venture was far from satisfactory at either end of the transaction.

The cage in which the most successful shipment was made had the water bottle. A fortunate thing happened in this shipment that to me proved this conclusion: Water is necessary for successful, long-distance shipments during warm or hot weather. In this particular shipment the cages were crated in lots of three, having a cloth strap handle tacked on each lot to carry them by. By a mistake the shipper tacked the handle on the wrong side of two of these lots so that the express handlers carried them upside down all the way, the bees not being able to get any of the water. The six packages in these two lots were the only dead ones in this shipment of 90. Those bees that could get the water were in fine condition. Another thing that strengthens my conclusion is that this same shipper had previously sent three shipments without water and they nearly all arrived dead. Another later shipment with water arrived in fairly good condition. The cage illustrated and used by this shipper measures 9x14x4 inches, being a large cage for one pound of bees.

The next best results were obtained where the syrup can was used, but out of several that I received that way none quite came up to the one mentioned above where the water bottle was used. One shipper who sent 105 packages in four shipments by the syrup-can method had a loss of 22 per cent. I received several shipments in which only candy was used. In these the bees were all dead on arrival.

I know nothing of the conditions that the bees had to pass thru enroute, but I think that the express men should be educated to take better care of them. Instead of putting them in a far corner of the car and piling baggage in front of them, the expressmen should be taught to sprinkle them occasionally and keep them where they could get air in hot weather.

Most of the shipments to me were about five days on the road; a few were seven. A number of them went by way of Kansas, and it is possible that they experienced some hot waves on the route. In no case, as I remember, did they consume all their food, and some of the shippers put in much more than was necessary. If they had all been supplied with water I think we would have had a much better story to tell.

In introducing pound packages I tried every method I could find recommended in

FROM THE FIELD OF EXPERIENCE

Gleanings and elsewhere. The one I prefer is to confine them in the hive with a piece of excluder over the entrance. I take out enough frames so I can set the cage right in the hive, and before opening and placing it in I sprinkle the bees with thin syrup or even with just plain water. This holds them in while I make an opening in the cage to release them and get the cover on the hive. If the queens come caged I release them also at this time.

Garland, Utah. Joseph H. Peterson.

[This is a very important question. To a certain extent the whole industry for the coming season hangs upon the successful shipment of bees in package form. There is nothing more discouraging or more exasperating than to have half or all of the bees arrive dead. This causes more or less controversy between shipper and consignee and by the time that a second shipment is sent thru it is too late. The writer was the one who first suggested the use of the water-bottle in pound cages; but in view of the fact that some very successful shipments were made by Southern beekeepers without the water-bottle, we had almost come to the conclusion that it was an unnecessary expense. But the experience of a number of breeders of bees has seemed to indicate that on long-distance shipments, especially in hot weather, the water-bottle is a necessary and an important factor. The evidence presented by our correspondent is invaluable and we hope that bee breeders of the South will read this article very carefully. The makers of pound cages should so construct them that the water-bottle may or may not be used.—Editor.]

COSTLY EXPERIENCE

Sow Sweet Clover Right Where You Are—Lots of It and Keep at It

Sweet clover will eventually revolutionize the whole bee-business. There are millions of acres of land in this country that will grow sweet clover and that are absolutely fit for nothing else. Why do not the beekeepers utilize some of this land?

There are many beekeepers living close to towns where there are hundreds of acres of waste lands in town lots that could be used for sweet clover. There are thousands of beekeepers that live in sections where there is old, poor, worn-out land that the owners would be glad to have sown in sweet clover. Why not sow it now? I get letters from the seven corners of the United States wanting to know of the honey prospects in this section—letters from parties that are willing to put up several hundred dollars to try out a new country. I want to give to all of

these inquirers this advice: Instead of putting this money in the coffers of the railroad companies, put it in sweet clover seed, and build up your own location.

I had a call recently from two Michigan beekeepers, looking for new fields. Their own locality yielded more honey than mine. Now add sweet clover to their location and you have a bonanza. I also had a call from a dentist beekeeper. His dental trade paid \$3,000 a year. He wanted to keep 200 colonies of bees. His old location gave 40 pounds per colony. Now add sweet clover and he will have a location that will give 100 pounds per colony.

Thousands of beekeepers try to increase their yield of honey by adding some fool contraption to the new, modern, up-to-date fixtures now on the market. Let these invest their time and spare cash in sweet clover seed. Any white clover location can be doubled in value from a beekeeper's view point, by adding sweet clover.

I moved to this country four years ago. I left a good, average white clover country. I now have a sweet clover location with no white clover to speak of, which yields 75 pounds per colony. Now if I could have my old white clover, too, I would have a location that would give 125 pounds per colony. This is impossible to obtain here, so I now see my mistake. The money I put in moving 80 miles to my present home, if it had been put in sweet clover seed and sowed on my old location, would have given me a location 40 per cent better than my present one. In my old locality farmers are sowing sweet clover by the thousands of pounds. Only yesterday I had an inquiry from one of the most progressive farmers in the county, for enough sweet clover seed to sow 150 acres, on land worth \$200 per acre. (There is a moving bee beginning to buzz in my bonnet again.)

When I say "sow sweet clover to make honey," I mean sow the railroad right-of-way; sow the highways; sow the byways; sow the vacant lots; sow the farmers' fertile fields; sow the barren spots; sow the cliffs. Sow 10 pounds of yellow and 10 pounds of white for each colony. Sow one-half of it this spring; then do it again next year. Dig down in your jeans; shell out your greenbacks. A hundred pounds is money wasted.—sow it by the thousands. Make your business stand alone; make your business give you a commercial rating; get out of the rut; do not let the Editor of Gleanings make you believe that sweet clover is a slow yielder of honey. He never saw a sweet clover location. Get 200 acres in reach of your hundred colonies; get conditions right; watch 8, 10 and 12 pounds, day after day, go into your supers; then get busy.

I have no seed for sale. I am not inter-

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ested in any one that has. I simply write this article for the benefit of the wide-awake beekeepers; for the men who think; for those who are willing to take the advice of one who has spent hundreds of dollars of his hard-earned "dough" looking for new locations.

Falmouth, Ky.

Virgil Weaver.

CONVERSATIONS with DOOLITTLE

He Answers a Question About the Egg-laying Capacity of Queens

"A neighbor gave me some old bee papers he had, and in one of them I find something about the capacity of queen bees for laying eggs, the claim being made that a good queen could lay as many as 3,000 eggs in 24 hours. This hardly seems possible. Will you tell us something about this in *Gleanings in Bee Culture*?"

The prolificness of queens was something much discussed in our bee papers a quarter of a century ago, the claim being then made that the more eggs a queen could lay the better the results would be in honey, and quite a few reasoned that the queen and colony which would keep strong at all times of year was the ideal queen to breed from. This led to difference of opinion between those producing section or comb honey, and those producing extracted honey. The latter held to the idea that queens should lay a large amount of eggs at all times. The former were strong in their belief that only as the queens reached their maximum prolificness about six weeks before the main honey harvest for surplus, could this prolificness count for the highest success. By going over an old diary, I find that prior to 1874 I had thought that nine Gallup frames, containing a comb space of about 1,000 square inches, would entertain the best queen to her fullest capacity, no matter whether the colony was worked for extracted or comb honey. At about that time a prominent beekeeper by the name of Adair brought out what was called the "long-idea" hive. I made two of them, working one of them for extracted honey and the other for comb, these hives being made to hold 32 Gallup frames instead of the nine I had been using up to that time. I selected two average colonies, and when the nine frames were well covered with bees, and there was brood in seven or eight of the combs, I set each over into these four-foot hives. At the same time I selected two other colonies of about the same strength, one to be worked for extracted honey on the tiering-up plan, and the other on the plan I had before been using for comb honey. In due time the two long hives were filled out with the full 32 combs, with sections on the one for comb honey, and

extracting going on every week to 10 days with the other, as was the custom at that time. With the tiered-up hive, the queen was kept on the nine frames by means of a slatted honey-board, and the one for comb honey manipulated as well as Doolittle knew how. Before the basswood harvest arrived the extracted-worked colony had brood in every one of the 32 combs, the amount of about 18 to 20 combs full of brood; while the one worked for comb honey, having 32 combs, had brood in only 13 combs, the amount in these being little more than what nine frames would have contained. Thus the queen in the extracted-honey hive was laying about 5,000 eggs each 24 hours, and the one in the comb-honey hive was giving only about 2,500, each queen evidently laying to her fullest capacity.

After considerable study and experimenting along several lines, I was driven to the conclusion that the cause of this difference was that where extracting was done as often as once a week plenty of cell room for brood was given; and that, under the stimulus of the bees cleaning up their combs, the queen was fed by the bees to an extent that caused her to double her usual egg-laying powers that were natural and as nature demanded when the colony was in a hollow tree or some cleft in the rocks. Thus, thru management, I had brought about the doubling in development of the embryo eggs she had in her ovaries. These four queens used in the experiment were less than a year old, but the one in the long extracted-honey hive died of old age that fall, while the other three lived and did good work the next season. This long hive worked for extracted honey gave 566 lbs. surplus, while the one worked on the tiering-up plan gave 359, thus showing 207 more pounds of honey for double the brood reared. The long hive worked for comb honey gave 51 lbs. of section honey, with the 32 combs almost solidly full of honey, while the one worked by my old plan gave 309 lbs. of section honey, with enough below to winter the colony.

A good queen can lay from 2,000 to 3,000 eggs in 24 hours in the swarming season; but the question arises with many, can a greater amount than this be produced at a profit? If it were the EGGS in themselves which gave the financial profit, as with our poultry, then the queen which gave the most would be the one we all should want; but there are many times that the prolificness of the queen causes a large amount of honey to be used in rearing the brood from her eggs, which produce only bees that become consumers instead of producers, on account of this vast horde coming at the end of any certain honey flow, instead of at its beginning.

Borodino, N. Y.

G. M. Doolittle.

E. M. B. writes that I said in September, 1916, *Gleanings*, page 777, that for 20 years to stop swarming, I had raised brood above sections, using a ventilated bee-escape board on top of the sections; and he wants to know if I put up only sealed brood. That's a modification of the Demaree plan, and if you will look again, friend B., you will see that I don't say I used the plan but quote from M. H. Hunt. Very likely Mr. Hunt put up brood in all stages. I never used the plan except in a few cases, and they were not a success because the bees carried down bits of dark comb from the brood above to darken the cappings of the sections.

* * *

A. I. Root, you're infringing on my patent is using a wheel-hoe for a wheelbarrow, p. 957. With one having a high wheel, such as you and I use, the load is jarred much less than on a wheelbarrow, and I'm wondering whether it is not much better for wheeling a hive of bees.

* * *

"Ever have your temper tried by a swarm that would persist in settling back on a limb as fast as you shook it off, said limb being too high up to be reached by a smoker? Floyd Markham says to take a piece of rain-conductor spout long enough to reach, and blow smoke into the lower end."—Domestic Beekeeper, 40.

* * *

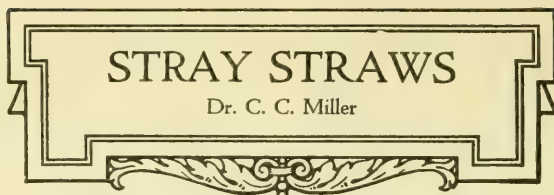
C. V. Rice, you say, page 104: "I really thought that I was fortunate in having so much drawn comb in sections for next season." You are, in spite of the fact that they will not make as nice sections as fresh foundation. The promptness of the bees in entering supers containing such sections, together with the greater amount of honey stored, overbalances the lower price at which they must be sold.

* * *

"When Introducing, Why Not Daub Bees Alone and Not the Queen?" is the caption and substance of an item from G. G. Desmond, page 104. I shouldn't want to try that on a large scale. You can't very well daub all the bees, and there's little to hinder the undaubed ones from being hostile. Many years ago introducing by daubing the queen was perhaps the most popular plan, and succeeded in thousands of cases—without hurting the queen, too. Giving the teacup of honey with the daubed queen is simply an added measure of safety to the old plan, and surely should help.

* * *

Frank Morgan says, page 104: "On page 941 Dr. C. C. Miller seems to think the claim that colonies run for extracted honey will



produce 50 to 100 per cent more honey than when run for comb, isn't anything more than loose guessing . . .

At any rate . . . we have proved to our satisfaction

that this is a fact." My good friend, you seem to have missed the point I was making. I said in effect that the different claims for increase of extracted over comb honey ran all the way from nothing up to 100 per cent. I wanted to know, in this wide variation of opinion, where the truth lay, and some proof for it. Like enough you are right, but isn't your own statement, "50 to 100 per cent," rather "loose"? Now if you will tell us a definite per cent, 50, 75 or some other, and how you proved it, and if others will do the same, it will help a lot.

* * *

A Pennsylvania correspondent asks how, with a German wax-press, he can at one operation extract yellow beeswax out of old dark combs without remelting. I don't know of any way. You can have a fairly good product, altho a little dark, if you will let it be a long time cooling, covering up well to keep it warm, or putting it in a fireless cooker. It may be made lighter in color by using sulphuric acid, but the danger of injuring it by this means is so great that the foundation-makers to whom you send it prefer that you should send it without such treatment. Everything in beekeeping seems to tend toward specializing. Time was when beekeepers made their own hives and foundation, but hardly any one thinks of doing that now, and I find it easier and cheaper to send my old combs to those who make a business of melting them.

* * *

"The temperature should be somewhere about 40 or 45 degrees" when we want bees to breed in the cellar, page 101. You succeeded at that temperature at Medina, but do you know you would not have succeeded as well at a higher temperature—or lower? You know that for years we thought 40 or 45 was the best temperature for cellar-wintering, but Dr. Phillips has taught us better. On the other hand you know that bees outdoors begin breeding earlier than those in the cellar, just because of the severe cold. I wonder if we know very much definitely about it. However, except as a matter of curiosity, I don't suppose it matters, for you are no doubt right that it's not likely to be a profitable plan to adopt. [For breeding in the cellar we would prefer to have a temperature higher than 45 rather than lower than 40. It could go even as high as 55 and perhaps 60, providing there was plenty of ventilation, and we are not sure but that at the last named temperature the conditions would be more favorable for breeding. The danger would be, however,

that such a temperature would be too much of a good thing.—Editor.]

Melting old combs and scraps has been quite generally considered a job to be put off till the leisure time of winter. Oscar Ritland says, February, page 83: "I prefer the summer time to do the work; and the hotter the day the better." Aside from the matter of leisure, probably everything is on the side of hot weather. As the whole business depends on getting up a certain amount of heat, the hotter the weather the less artificial heat required. One rather important item is that the hotter the weather the longer you can keep your mass of wax cooling, and the better chance to let it clear. [The advantage of doing the melting during the winter time is that the beekeeper has more time at his disposal; moreover, there is no chance of robbing, which might be dangerous if foul brood were in the combs before they were rendered.—Editor.]

Stancy Puerden, please don't stop talking about cornmeal just yet. I was deeply interested in your talk in November Gleanings. Cornmeal is practically taboo at our house, and I think largely thruout this region. I suspect our women folk don't know how to handle it. When I was a boy in Western Pennsylvania, "mush and milk" was a staple article, and a pone baked in a Dutch oven under the ashes was not to be despised. And when you talk about a thin cake, "crisp and crusty," yum! yum! it makes my mouth water. One objection to using cornmeal is the high price of eggs; and when I read aloud "hoe-cakes contain nothing but meal, salt, and water," there is a surprised echo, "Nothing but meal, salt, and water!" which sounds the least bit like saying, "What does that woman know about decent victuals, anyway?" But if you keep right on I've a faint hope that some day my folks may achieve a hoe-cake.

Geo. L. Emerson, February, page 76, says: "Roughly speaking, there are some 200,000,000 pounds of honey . . . an average of about \$20,000,000 worth of honey per year in the United States." That's figuring on about 10 cents a pound as the average price. Then in a footnote he says: "The prices considered in this article are not war prices but based on normal conditions." That sounds as if he had in mind that just now we have war prices, and when the war is over prices will settle back to where they were before the war. Don't think it, George. In more than one way honey is now having such a boost as it never had before. Much is being said—**outside of bee journals**—about the special value of honey, and in all sorts of periodicals you will find 20 times, if not 50 times, as much in the way of recipes for the use of honey as you found before the war. The effect of this will not pass away with the passing of the war. When the war closes there will be a general settling

of prices, and no doubt the price of honey will come down; but never to the old level. Don't you see? if there had been no war, and honey had had the same boosting it is now having, there could not have failed to be an increased demand and corresponding stimulation of prices? Well, that's just what we're going to have, and there are bright prospects ahead for beekeeping. [It is our opinion that honey will not go down to its former level even after the war is over, and conditions normal. The vast amount of free publicity recently given to honey will keep the price up.—Editor.]

It appears we're not getting along very rapidly at educating the public to use the term "extracted honey" when even the dealers call it "strained honey," as you will see by looking at Buffalo quotations in "Honey Markets," January, p. 4. I've heard even beekeepers say "extract honey," suggesting extract of honey; and in the popular magazines, whenever a recipe calls for honey it's almost invariably "strained honey." Can't some one think of a better term than "extracted"? "Liquid honey" would be just the thing if honey would stay liquid, and possibly it might do in spite of the candying. "Combless" or "waxless" might be better than "extracted" if "extracted" were not already in use. Should we keep right on trying to have "extracted" something more than a beekeepers' term, or shall we use something else? ***

A New Zealand correspondent is somewhat disturbed lest we be working against God's will when we try to prevent swarming, or select the best queen to breed from instead of allowing the bees to have their own way and rear queens from all grades. Quite likely natural swarming is the best thing when bees are left to themselves, and the same thing applies to queen-rearing, and I would not for a minute think of interfering with the natural habits of bees if I didn't think God wants me to; but I have a very distinct belief that he does want me to do my level best to control bees and to do all I can to make them produce all the honey they will to help in supplying sweets for ourselves and allies, so as to give us strength to set the Kaiser down where he belongs, even if we have to set him down so hard as to make his teeth rattle. My warrant for interfering with the natural habits of the bees, I get from Genesis 1:27, 28, where we are told that God made man, male and female, "and God said unto them, Be fruitful and multiply . . . and have dominion . . . over every living thing that moveth upon the earth." I take that as a direct command to control the bees; for what sort of "dominion" would it be if I left them to do as they please? So when I try to control swarming, and breed from the best, I believe I am trying to do according to the mind of God.

DR. MILLER asks, page 89, if there is any good reason why one should keep a hive queenless for 30 days instead of 10 in the treatment of European foul brood. I should say there was, sometimes. All European foul brood is not alike. While inspecting I find a great difference in the character of European foul brood. In some hives the larvæ appear to die young and are easily removed from the cells, while in other hives the larvæ die in all stages of growth, from two or three days old to those that have their growth and are even sealed over, and when examined have much the same appearance as American foul brood, being changed into a sticky, stringy substance, that bees can not readily remove from the cells. Indeed (I hate to confess it) I have been deceived again and again into thinking it was American foul brood. Now it stands to reason that when conditions are such as I have described it will require much more time than when the dead larvæ are small and easily removed and three weeks or even four is not too long a time for the colony to clean up, unless it is very strong and particularly enterprising.

Staney Puerden informs us, page 91, that honey contains vitamines, an important fact, and may be one reason why honey is more desirable than sugar for the rearing of brood.

The United States Food Administration advises against the use of sugar for frosting cake. Somewhere in my travels I have found granulated honey used for this purpose, and it was entirely satisfactory.

Those beekeepers who are not too old to learn can get more than the value of a year's subscription for Gleanings from the article by H. H. Root on the art of rendering beeswax. I received some points of considerable value.

There are several good things that will, I believe, come out of this awful war. One of the least, perhaps, but one in which all beekeepers are interested, is that honey will be more extensively used and appreciated than ever before.

I was interested in Mr. Coverdale's article on sweet clover, page 845. One great difficulty about introducing it around here is in getting a good stand of it. Is it because of a lack of lime or bacteria in the soil? It seems to grow well along the roadsides. Would he recommend the use of scarified seed when the seed is sown in the fall?

SIFTINGS

J. E. Crane

C. V. Rice, on page 104, quotes Floyd Markham as saying "No one can produce fancy honey nor even No. 1 in sections that have drawn combs in them

from the season before," and asks the consensus of opinion in regard to drawn comb in sections. Let me say that I think Mr. Markham's assertion quite too strong. We have in such sections produced honey that I doubt very much if Mr. Markham could tell from that built on new foundation. I certainly could not if they had not been marked with a pencil. I will grant that old drawn comb will not, as a rule, result in as nice looking sections since the wood is likely to be somewhat stained. To secure best results it is necessary to clean thoroly and cut down the old comb to within about $\frac{3}{8}$ inch of the center or septum. We use a special knife for this purpose and like it much better than B. Taylor's method of melting. We shall use several thousand such sections of old comb this year.

I and my helpers undertook the job of salvaging nearly a hundred cases of comb honey for a large city dealer. It had been shipped from several producers, and was badly broken. It was then re-shipped to me to prepare for market. This was a sticky, mussy job if ever there was one, but I shall get out of the mess some 30 cases of unbroken sections, a thousand pounds of liquid honey, 40 or 50 pounds of wax, and not a little information as to how some people pack their honey for market. One producer had marked everything "not less than 11 oz."; another "not less than 12 oz."; while another had risked his reputation in marking "not less than 14 oz." Some sections were not marked at all. Some cases contained both white and dark honey. Some sections labeled "white clover" contained buckwheat honey. Some had been put on the hives without separators and were badly bulged, while others had been used with too narrow separators and the comb built out beyond them, making it too thick for the carton, so the ingenious producer had shaved it off. There were some unfinished sections packed in with those that were finished and all supposed to be No. 1 honey. Some combs were old and dark but all went into the same grade. Indeed, there was no attempt to grade it. As I worked away at it for two or three days "I looked on and received instruction" as the wise man remarked a long time ago.

The severe cold of late December and January may cause the loss of many colonies of bees in New England.

Do you know? I would rather be given a hoe and a trowel and my time for a whole lovely morning in the garden than almost anything else you could name in the way of a good time. A hoe is one of my favorite tools, especially a certain light one with a scalloped edge. Don't repeat this at an art club, but I have always disliked Millet's picture of "The Man With a Hoe," and so, last summer, with the help of a good borrowed camera, I made my own picture. Don't you think it is more cheerful than Millet's? I always resent any implication that the man who works the soil should be an ignorant, downtrodden, stupid animal. He should be full of the joy of living, working in harmony with God and Nature.

No one ever tasted food in perfection who did not produce it himself. The boy in the picture, with the help of his older brother, planted that corn, hoed it and tended it and watched over it. They had never raised field corn until last year, and they were so proud of it when it gave promise of being taller than any other in this vicinity. But one day a severe wind storm laid that stately corn flat on the ground, and there were two sober boys in our home. When the storm finally abated and before the sun had dried off the mud, the boys went out and began work. They tenderly but firmly raised each fallen stalk and held it upright while they packed the damp earth around it. One grandfather told them to leave it to nature and the brace roots, and the other grandfather thought they were injuring it. But they persisted and within 24 hours with muddy clothing but beaming faces, they had their corn proudly erect again. And unless you have gone thru such experiences yourself you cannot imagine how good cornmeal dishes taste made from that corn ground in our own little mill. The boy in the picture furnishes the motive power for the mill,

OUR FOOD PAGE

Stancy Puerden



time I open a can of vegetables, canned fresh from our garden, every Puerden looks cheery, and we assure each other that we are going to work harder than ever in our war garden this coming summer. As for dried sweet corn, all three of our children have assured me individually and collectively and earnestly that I have never yet cooked enough at one time.

Have you noticed that every advertisement by a seedsman is urging you to get in your order early? That is sensible advice at any time, but this year it is very important. Get your seeds and make your garden plans early and help feed a hungry world. And you will have many happy hours working

"Among the lowing of the herds,
The rustling of the trees.
Among the singing of the birds,
The humming of the bees."

Pew'erden, Power'den, Peverden', or Pure'den?

Dr. Miller, in the February issue, is uncertain how to pronounce the name Puerden. Call me just what you like, Dr. Miller, and

so may any subscriber of Gleanings. You are quite welcome to say Stancy if you find it easier. I am going to confide in you that at the end of the year I thought it would be fitting to step out of Our Food Page and give someone else a chance. When I notified the editors they promptly went down on metaphorical knees. One made threats and another held out all sorts of inducements. He even went so far as to say I might write about anything I pleased, gardens, for instance. Now I I happen to know that editors are nice to contributors for only one reason: they want to please the subscribers. And because Gleanings subscribers have said



kind things about Our Food Page the haughty editors are nice to Stancy. But if I keep on with the work it is not to please the editorial staff. It is because I so much appreciate the kind letters which come to me. It is an inspiration to think I am gaining friends in many different sections of our country, and even in foreign countries. Let me assure every subscriber that Our Food Page is at his service in every way possible.

Oh, yes, I nearly forgot to tell you how to pronounce Puerden. Most people in our town call it Pure'den. People here are too busy for three syllables, and, not being famous, we do not try to accent the last syllable. You know grand opera stars have been known to change the accent of a name to the last syllable on becoming celebrated.

* * *

The New Ruling as to Wheat Substitutes.

Are any of you concerned about the ruling that we must buy a certain per cent of wheat substitute every time we buy wheat flour? I don't know what the proportion will be by the time this reaches you, but even if it should be fifty-fifty it is not going to be so difficult. Many of us have been using a very large percentage of wheat substitutes for some time, and the new rule will tend to equalize the burden. It has been hardly fair to those of us who are patriotic and loyal and substitute cornmeal, oatmeal, rye, rice, potatoes, barley, buckwheat, etc., for a large part of the wheat when there are people, ignorant or wilfully disloyal, who have been using meat three times a day, white flour exclusively and wasting food. To illustrate, let me tell you a little story of a colored washerwoman. She said she and her husband used meat three times a day, but she finally became convinced that they ought to practice conservation at least once a week, and so they are using only dried beef and crackers for supper Saturday night. She is too ignorant to realize that those are the very foods needed to be shipped abroad—meat, wheat and fat. Evidently she does not fancy conservation desserts, for when she goes out to work she supplements her dinner by pie brought from home, and throws part of the crust in the garbage pail.

* * *

A Honey Story.

Now I am going to stop talking conversation for a few minutes to tell you a true honey story. One morning a certain mother of four children was in the kitchen frying grid-dle cakes, while her husband and the children were eating them in the dining room. The father poked his head into the smoke-laden air of the kitchen and said, "Do we get any honey this morning?" "Why, no," said the mother, "I thought we could get along one morning without honey." "Then you come in here and settle these children," said the father firmly, "and I will take your place in the kitchen." I imagine the father in this story will add beekeeping to his accomplishments next summer.

Before leaving the subject of honey, let me urge all of you to read two articles by Alfred McCann. One is on sugar and is in the February number of Physical Culture, and the other is on honey and is to appear in the March issue of the same magazine. He puts the case for honey more strongly than I would dare. If dietitians keep on saying such fine things about honey, may be we shall live to see the day when honey is our best known sweet, as it was in antiquity.

* * *

Before giving recipes, may I say a few words more about the home grinding of wheat and other cereals? You know many of our foremost authorities on foods have much to say about the present methods of milling which deprive us of some of the most valuable constituents of the grains, the soluble minerals, vitamins and body regulating substances. Even graham flour is sometimes made by combining a poor grade of white flour with bran, in which case it is not a true whole wheat flour. I am not blaming the millers. They furnish what they believe the public wants, and the public needs to be educated to prefer grains as nature intended them for us. In the meantime you can make a good grade of whole wheat flour with one of the little hand grist-mills on the market, and you may also enjoy the whole cornmeal containing the germ, which is usually removed from the commercial cornmeal to make it keep better. Perhaps you think it seems a step backward in civilization to take such work back into the home. We may be thankful if this war does not force us to take several such backward steps.

With our mill, which is one of the smaller ones, we find if we set it to grind coarsely, and then put the resulting coarse meal thru a second time, we get a more evenly ground product than if we attempt to grind it fine the first time. Also I find it is difficult to make light bread if I use entirely home ground whole wheat flour. We like it combined with about half white flour. The home-ground cornmeal makes fine muffins, johnnycake and cornbread with the old-fashioned flavor which we have missed in much of the modern cornmeal.

The recipes given below calling for whole wheat flour were tested with the home ground flour.

Notice that several of the recipes call for rolled oats. If you have never tried it you will be surprised to find how good oatmeal is in bread. It makes a very tender crust, and the bread is of fine texture and light in color. You may use it with white flour alone or combine it with part whole wheat. The Food Administration advises the preliminary scalding to more thoroly cook the oatmeal.

OATMEAL BREAD.

2 cups rolled oats	½ cake dry yeast softened in
2½ cups boiling potato water	½ cup warm water
2 teaspoons salt	Whole wheat flour
1 tablespoon honey	White flour

(Continued on Advertising Pages.)

WHEN the bees start their spring flying, the beekeeper begins to think about his spring work. There may be very little to be done at first, and

if the bees were generously provided with stores in the fall, as they should have been, and if they have ample room, letting them alone until the weather is fairly steady is probably about the best thing the beekeeper can do, especially the beginner. Unless upward ventilation is used, the covers are sealed down tight, and it is a pity to break the seal while chilly winds are still rampant and nights are cold. But if, upon lifting one end of the hive, it is found to be dangerously light, it may be well to investigate. Combs of honey can be slipped in without much disturbance of the hive, or a warm, heavy syrup—say, two parts sugar to one of water—may be fed in pans in the supers.

After the days have warmed up a bit more, a general inspection of all colonies is advisable. If some very weak ones are found, it is usually better management to unite them, not weak with weak but weak with strong. Then the others can be brought to about equal strength by taking brood or stores from those that have plenty to give to those that lack. This, however, is not to be done haphazard, but carefully, with system and understanding. The stronger of the needy ones must be helped first, because, you see, they are most worth while and will soonest respond to assistance, and will soonest come out from the class of the needy into the class of the givers. Do not levy too heavy a tax on these strong contributing colonies—Dr. Miller advises exempting at least four good combs of brood. When thus equalizing brood, give that farthest advanced, some already emerging, if possible. (And, by the way, let us always say “emerging” when emerging is what we mean. “Hatching” is something quite different. Worker brood hatches from the egg about 18 days before it emerges from the cell.) And in giving either brood or honey, of course care must be taken that the queen is not on the comb transferred.

Another really important matter for attention at this time, and one often overlooked by beginners, is that of providing water. Plenty of water near at hand means both time and wing conservation. When brood-rearing gets well under way, bees need a great deal of water, and if they have to fly long distances, a heavy toll is often paid in the rapid wearing out of the old bees that have already survived the winter. There are scores of excellent suggestions for watering devices, but a mere pan of water, with chips floating on top will serve very nicely. Many beekeepers put salt in the water, claiming that the bees prefer it so. I have used it

Beekkeeping as a Side Line

Grace Allen

both salted and unsalted, but never the two methods side by side, which is of course the only proper way to decide intelligently between them. If there

is danger of the bees bothering neighbors' pumps or watering troughs, and water is to be offered them in some new places, it would be well to sweeten it slightly at first, to attract them, till they get the habit of coming to this particular spot. Care must be constantly exercised to keep the supply from becoming exhausted. If the bees cannot depend steadily upon your watering system, they are likely to go to some more dependable source, possibly either wearing out their own wings in long, unnecessary flights, or wearing out the patience of the neighbors, with their steady attentions.

A great many backlotters keep both chickens and bees. It is no unusual sight during the early days of spring to see the bees take possession of a hopper of dry mash. Many a time I have seen a flock of complaining baby chicks and a greatly disturbed mother hen, with ruffled feathers and a generally ruined disposition, fussing around the low box of bran or mash in the corner of the brooder coop. This indicates a shortage in the pollen supply. When in real need, the bees may be fed artificial pollen but not too early nor in too large quantities. Some beekeepers have successfully given rye or graham flour or even corn meal, or a mixture of several of these pollen substitutes. It is comical indeed to see the bees load up on this stuff, carrying it off in their pollen baskets like a housewife with a victory loaf. But when the natural pollens become plentiful, there will be no more bees around your meal or flour.



MARCH.

March has set the whole world shaking,
There is storm and sun,
Earth and roots and hearts are waking,
Miracles are done.

From a secret place, a whirring;
See the sudden wing!
All around is something stirring—
March has brought the spring!

While the sullen clouds and leaden
Get them grimly by,
March has let the maples redden
Up against the sky.

There the bees are coming, going,
Thru the fringing trees—
Tell me how you knew, you knowing
Uninstructed bees!

GLEANINGS FROM THE NORTH, SOUTH, EAST, AND WEST

THE CROP CONDITION IS NOT VERY ENCOURAGING. DURING THE PAST MONTH OUR SECTION HAS AVERAGED SOMEWHAT LESS THAN AN INCH OF RAIN. WE ARE CONFRONTED WITH CONDITIONS THAT HAVE NEVER PRESENTED THEMSELVES BEFORE AND, FOR THIS REASON, IT IS DIFFICULT TO FORETELL CONDITIONS. THE EXTREME NORTHERN PART OF THE STATE, IRRIGATED DISTRICTS AND RIVER LOCATIONS (APHID HONEY ONLY) ARE EXPECTED TO YIELD NORMAL CROPS. SOME ANXIETY IS FELT REGARDING A SUFFICIENT SUPPLY OF WATER FOR IRRIGATION, AS THE SNOW FALL IN THE MOUNTAINS HAS BEEN EXTREMELY LIGHT. THE NUMEROUS NON-IRRIGATED LOCATIONS DEPENDING ON SPRING AND SUMMER CROPS, ARE EXPECTED TO SUFFER CONSIDERABLY. A LARGE PROPORTION OF THE HONEY PRODUCED IN NORTHERN CALIFORNIA COMES FROM FALL BLOOM. LATE SPRING RAINS PROVE VERY BENEFICIAL TO THESE PLANTS, AND IT IS NOW TOO EARLY TO PREDICT PROSPECTS FROM THIS SOURCE. SPRING WORK WILL GIVE US MORE OR LESS CONCERN. DUE TO THE COMPARATIVELY MILD WINTER AND LACK OF RAIN, BROOD-REARING IS MUCH ADVANCED FOR FEBRUARY—a VERY UNFORTUNATE CONDITION WHEN IT IS CONSIDERED THAT OUR SPRING BLOOM, SO FAR, HAS HAD LITTLE CHANCE TO DEVELOP. IN NOT A FEW LOCALITIES PREMATURE BREEDING IS TO BE EXPECTED, WHICH IN MANY INSTANCES WILL RESULT IN DEPLETED STORES BEFORE SPRING BLOOM APPEARS. THE UNCERTAINTY OF THE SPRING BLOOM, AND THE FACT THAT IT WILL COME LATE, DIMINISHES THE POSSIBILITY OF SECURING MUCH INCREASE BEFORE THE HARVEST. NEVERTHELESS, IT SHOULD BE REMEMBERED THAT THE UNEXPECTED MAY HAPPEN AND IT WOULD BE FOLLY NOT TO BE PREPARED FOR ANY EVENTUALITY. FOR THIS REASON IT IS WISE TO HAVE ALL EQUIPMENT IN READINESS, TO PLAN ALL WORK SYSTEMATICALLY, TO ORDER BEE SUPPLIES NOW, TO PREPARE AS EARLY AS POSSIBLE FOR GOOD QUEENS, AND TO BE SURE TO KEEP EVER A SHARP WATCH FOR FOUL BROOD. MOREOVER, DO NOT KEEP ANY WEAK COLONIES AT THE OPENING OF THE HONEY FLOW. THE DOUBLING UP OF THE WEAK ONES HAS NEVER YET FAILED TO INCREASE THE HONEY CROP. WHEREVER POSSIBLE, IT IS AN EXCELLENT PLAN TO PRACTICE MIGRATORY BEE-KEEPING. ORANGES PRACTICALLY NEVER FAIL TO YIELD A SURPLUS, AND ALMONDS, (FEBRUARY) PRUNES, PEARS, PEACHES AND CHERRIES GIVE EXTRACTINGS WHEN GOOD MARCH WEATHER PREVAILS. A SPRING SUCH AS THIS WILL PAY THE BEEKEEPER, PROVIDING HE IS ADVANTAGEOUSLY SITUATED, TO MOVE TO THE ABOVE-MENTIONED FRUITS. IT WILL PAY HIM FOR NO OTHER REASON THAN THAT HIS COLONIES WILL BE BROUGHT INTO GOOD STRONG WORKABLE CONDITION. THERE ARE ALMOND AND PRUNE ORCHARDISTS WHO PAY BEEKEEPERS AS HIGH AS \$1.00 PER COLONY FOR PLACING BEES IN THEIR ORCHARDS. IT MAY BE MENTIONED THAT A CERTAIN ORCHARDIST HAS OFFERED TO PAY IN ADDITION TO \$1.00, THE COLONY TRANSPORTATION CHARGES TO AND FROM HIS YARDS, AND ALSO \$50.00 BESIDES FOR A MAN TO TAKE CARE OF THE BEES WHILE IN THE ORCHARD. NOT ONLY IS

NORTHERN CALIFORNIA

Reported by M. C. Richter

a beekeeper benefitting himself by means of such migration,

but he is also making it possible to increase production in a line other than his own.

Uncle Sam has obviously located our vital weak spot—brood diseases. It is a pleasure to announce that Geo. S. Demuth, one of the big guns of the Bureau of Entomology, and Geo. A. Coleman of our University, will hold a series of meetings under the direction of the States Relations Service in northern and central California, as follows:

Bakersfield meeting, 10 A. M. and 4 P. M., Apr. 1.

Visalia meeting 10 A. M. and 4 P. M., Apr. 2.

Hanford meeting, 10 A. M. and 4 P. M., Apr. 3.

Fresno meeting, 10 A. M. and 4 P. M., Apr. 4.

Modesto meeting, 10 A. M. and 4 P. M., Apr. 5.

Sacramento meeting, 10:30 A. M. and 4 P. M., Apr. 6.

The meetings will be advertised and a large attendance is expected. Mr. Coleman has requested that the promotion committee have a campaign organizer at all the meetings. Not only will his request be complied with, but also it is expected that our State Market Director will talk at most of the gatherings.

In Gleanings for February, under "Northern California," mention was made of the appointment of a promotion committee by our State Association to form and perfect an organization campaign for collective marketing. On Jan. 26 the committee perfected two agreements, known respectively as the "Exchange Agreement" and "Marketing Agreement." The committee also temporarily divided northern California into the following four districts: 1st district—Kern, Kings, Tulare, Fresno, Madera and Inyo counties; 2nd district—Merced, Stanislaus, San Joaquin and counties east; 3rd district—Solano, Sacramento, Yolo, Colusa, Sutter and counties east; 4th district—Glen, Butte, Tehama and counties east and north. Each district is to be known as the _____ Honey Producers' Co-operative Exchange, the name of the exchange to be determined when organized by the directors. The promotion committees' members according to districts are: 1st district—F. D. Lowe of Bakersfield, Fred K. Howard of Hanford, Louis Sinn of Reedley, J. C. McCubbin of Reedley, and S. A. Carhart of Big Pine; 2nd district—M. S. Dickinson of Los Banos, F. W. Burtch of Modesto, M. C. Richter of Modesto, and Willis Lynch of Stockton; 3rd district—Oliver Parks of Davis, and B. B. Hogaboom of Elk Grove; 4th district—Mrs. M. E. Engles of Chico, and Harry K. Hill of

Willows. These members are now engaged in preparing campaign meetings in their respective districts. It is hoped (and, moreover, expected) that all readers of Gleanings residing in northern and central Cali-

fornia will attend these proposed meetings. Copies of the co-operative agreements will be mailed to any beekeeper who applies for them thru his district member of the committee.



ON Feb. 2, SOUTHERN CALIFORNIA

Reported by L. L. Andrews

Regular meetings and election of officers in the Riverside and San Bernardino clubs were held. The Riverside County club elected R. Powell, president; Chas. Kinzie, first vice president; and E. W. Horne, secretary-treasurer. This club is one of the most promising in the State and has been of much help to the members in the buying of supplies and in keeping its members in touch with honey prices. San Bernardino County club elected H. A. Wagner, president; and J. E. Mack, secretary-treasurer. Each of the clubs has selected a purchasing agent and will buy supplies and have foundation made at reduced rates to members.

All are very glad to see the spirit of "get together and make it go" exhibited by members of the Los Angeles County club. This club has been very quiet during the past year, but the boys are determined to make theirs one of the best clubs in the State this year. Earl Shaffner is president, and J. D. Bixby is secretary.

Beekeeping methods in Southern California are changing and honey production is becoming more the business of specialists. The school teacher with 100 or 200 colonies of bees is adding a few more apiaries, and in many cases these school teachers are living in hopes of being able to give up the teaching. Some business men would like to put money into bees if they could get a good man to run them.

Keep those hives in which the bees have died and those showing any disease away from the clean apiary. A hospital yard is becoming quite a popular way to handle the disease if there is enough to justify it. If there are only a few colonies, I would destroy the bees and make the combs into wax. I also think it pays to select very carefully and melt all combs with drone cells or those containing pollen. I have made a number of tests and find that the average Langstroth comb will give about 5 1/3 ounces of wax, if one gets it all. The amount of wax one gets, in excess of that necessary for replacing the foundation, pays very well for the labor, besides furnishing a lot of fine new combs for the next year.

A series of beekeepers' educational meetings has been arranged for by the State University in conjunction with the U. S. De-

partment of Agriculture. Mr. Demuth, assistant apiculturist,

and E. F. Atwater, special field agent, and Prof. Geo. A. Coleman of the State University will be present to assist and advise beekeepers in any way they can concerning treatment of disease and the production of honey. Meetings will be held in the southern part of the state as follows: Lonipoc, March 4-5; Ventura, March 6-7; Piru, March 8; Santa Ana, March 9; Ramona, March 11-12; El Centro, March 14; Riverside, March 16-18; Redlands, March 19-20; Ontario, March 21; Los Angeles, March 26-27; Pasadena, March 28-30.

This is the driest season to date, Feb. 1, since 1861, so say the reports. There has been one light rain, ranging from 1/2 in. in some localities to 1 1/2 ins. in others. This small amount is not enough to help the honey prospects, unless more comes soon. Honey plants that usually begin to show new growth in January are very dry and show no signs of putting out new foliage. Most beekeepers are optimistic still and say we will get plenty of rain yet. Altho the season has been unusually dry, it has been warm and a few plants, on irrigated ground, have furnished considerable honey for building up. The eucalypti in particular have produced an abnormal amount of honey and in a few instances have filled the hives to such an extent that several hundred pounds have been extracted.

In visiting Mr. Dunlap's apiary of 200 colonies Feb. 1, most colonies were found to have little or no brood. This apiary is located near Beaumont, at an elevation of 3,000 feet and the forage is considerably later than in the lower valleys. Part of this apiary has just been sold and the bees are to be moved to the oranges at Redlands, 15 miles away. Mr. Dunlap relates an interesting experience that happened a few years ago. He had one hive that was always full of bees and brood and produced remarkable crops of honey. Another colony had plenty of bees and brood and yet produced little or no surplus honey. He destroyed the queen from the poor producer, and introduced the queen from the good colony on two frames of her own brood. She remained in the hive for two or three years, and little or no surplus honey was gathered. Can any one explain?

[The case referred to, of moving the queen from the good colony to the poor one, is not a new one by any means. A whole colo-

ny of bees will form a habit of being good workers or poor workers, and changing the queen will not always produce the desired result till a year later. Reports have shown that even after the new stock has taken the

place of the old, the new bees seem to follow in the wake of their predecessors, providing both stocks are of the same season. If a whole year elapses then the real blood of the queen shows up.—Editor.]



WITH the exception of several lots mentioned

below, all honey produced in the southwestern Idaho territory, both comb and extracted, was sold early in the fall of 1917. The price received for extracted ranged from 12½ cents to 15 cents. At the annual field meet of the Idaho-Oregon Honey Producers' Association, held Jul. 10, a price of 12½ cents on extracted honey, in five-gallon cans, was set, with instructions to the secretary-treasurer to get as much higher price as possible. At the same time the price for comb was set at \$3.25 for fancy, \$3.00 for No. 1, and \$2.75 for No. 2. The comb-honey crop was sold, first sales, at the price fixed; later the price was advanced 25 cents per case, and some comb was sold at that figure. Small lots of comb not packed by producers in time to be included in cars shipped by the Association have since been sold on the Pacific Coast and shipped by local freight. Odd lots of extracted in five-gallon cans remaining in the hands of producers have been disposed of in the same market. No stock is left in this section except a few small lots of 5- and 10-pound pails, together with one lot of extracted in glass containers. This will undoubtedly be sold within a short time. Very earnest inquiries are still being received for comb and extracted in ear lots.

A Coast firm handling large quantities of sage and orange honey purchased one of the odd lots of extracted just mentioned. Com-

SOUTHERN IDAHO

Reported by P. S. Farrell

menting upon quality, they advised that this honey was considered by them as one of the best lots they ever received.

Southwestern Idaho is experiencing a remarkably mild winter. Severe freezing weather in October was followed by mild weather which continued over the proverbial "green Christmas." In December and early January bees were flying continually, and one large producer reported brood on four frames. I saw dandelions in bloom in protected spots; pansies bloomed in the railroad station park in Boise, and reports were made of lawns being cut the last week of December. Some apprehension was felt lest breeding continue to such an extent that stores would be curtailed, but since that time we have had sufficient cold to confine bees to hives. With no honey in the hands of producers, and sugar unobtainable in quantity, the matter of feed, should feeding be necessary, is something to be considered. Steps are now being taken to get in touch with honey suitable for feeding.

Certain honey producers in southern Idaho, with yards totaling from 500 to 1,500 colonies, claimed exemption from military duty. Information is now at hand that one Idaho exemption board investigated a number of these claims, and it is since noted that some beekeeper claimants have been dropped to one of the lower classifications of the draft.

Feb. 5, 1918.

P. S. Farrell.



TO demon-
strate the
possibilities

of Wisconsin beekeeping, the State Beekeepers' Association offered in the spring of 1917 premiums for the greatest number of pounds of comb honey from a single colony (the product of one queen bee) and a like premium for the greatest number of pounds of extracted honey from a single colony. Notices were sent to Wisconsin beekeepers and advertised in many local papers. Contests closed Sept. 3, 1917. H. H. Moe, of Woodford, Wis., won first on comb honey, and Fred Alger, of Waukau, on extracted honey. Mr. Moe had 97 finished sections, sold at 20c, \$19.40. His bees were removed from cellar Apr. 11, 1917; no spring feeding or spreading of brood; the

IN WISCONSIN

Reported by N. E. France

first super had some unfinished "bait sections"; the

young queen of fall of 1916. In May following, had hive full of working bees, which swarmed early; queen cells removed; colony returned, hive entrance enlarged by raising hive body from bottom-board and adding as needed more supers of sections with full sheets comb foundation; Sept. 3 this colony had 97 well-finished sections comb honey which was displayed at the State Fair. In same apiary another as strong colony had all sections with full sheet foundation, and no "baits" with result of a much less number finished sections and several unfinished. Mr. Alger's prize-winning colony produced 210 lbs. of

extracted; sold at 15c, \$31.50. His bees wintered in an underground cellar, removed in April in good shape; were fed a little to stimulate brood rearing up to June 15; large space was given queen for brood rearing; on Jul. 8 this colony swarmed, and returned to the eight-frame hive of full-sheet comb foundation and queen-excluder on top with another hive like this above; lower hive-body raised one inch for better ventilation; as fast as needed more hive bodies with foundation were added, each time giving new super next to brood chamber; Aug. 25 the supers of honey weighing 300 lbs. were extracted, getting 210 lbs. of white honey, which was displayed at the State Fair, sold to Wisconsin University at 15 cts., and displayed at the State Beekeepers convention at Madison. There were enough winter stores left in the colony, which was examined Oct. 11, and found well supplied. Mr. Alger says he would have received still more

from this colony had he removed all queen cells in the old hive at swarming time and placed it above the hive with queen and full sheets of comb foundation, using queen excluder between. Combs are attached to bottom-bar better from full sheets of comb foundation placed above a queen excluder than from those below.

Many Wisconsin beekeepers are now asking where and how to get feed for spring feeding. I am glad February Gleanings printed an article on that subject.

Snow in southern Wisconsin is now 18 inches on the level, which means clover is well covered. Northern Wisconsin has less snow.

Wisconsin bees are wintering well except those in single-walled hives outside.

Next week I will be in Madison, planning the season's work of the State against bee diseases.

N. E. Francee.



I N our last · NOTES FROM CANADA

"notes," it was stated that the month

J. L. Byer, Markham, Ont.

of December was bitterly cold and now the same must be said of the January just past. Colder even than the former month with almost continuous below-zero weather without even the slightest thaw. Officially we are told that it is 50 years since we have had a January with as low a mean temperature for the month, and unofficially many of us will say it was the meanest too for that matter.

On page 89, Dr. Miller asks why nothing is said about packing on the bottoms of hives. While I still have quite a lot of old hives with bottom packing, and said bottoms are rapidly rotting out—one of their failings by the way—needless to tell you, Doctor, that all new-packed hives or packing cases have none of this packing in the bottom. I do not wish to get into a scrap with any scientific man on this subject because of the surety of being worsted, yet the simple fact is that, in common with other beekeepers, I find no difference in results whether bottoms are packed or unpacked.

Going thru the grocery department of a large departmental store last week, I found that they had not a pound of extracted honey altho they usually handle between two and three hundred thousand pounds each year. Moreover, they did not know where to get more. All the honey they had for sale was a small supply of comb from Nevada. Doubtless a car-load had been brought thru by some wholesaler in the city. It was retailing for 28 cts. and 30 cts. per section according to grade. Some of the honey was "weeping" badly but there was

little breakage in what I examined altho the honey was very

poorly fastened to the sections. In many cases the sides of the sections were only touching the wood in two or three spots, the bottoms not touching at all, and I judged that only starters had been used. How this honey came thru the long haul without being all smashed up is a wonder, but of course some may have been smashed for all that I know as I am just speaking of the few cases I had the privilege of inspecting.

Not long ago a certain doctor in Illinois, famous as a dispenser of bee lore, made some comparisons in the matter of climate of said State and that of Ontario, inferring that they had much more wind to contend with than we have over here. An editor also backed him up in these contentions. Most earnestly did we wish for the privilege of having both of these gentlemen with us on Jan. 12 and letting them stand exposed for an hour or two to the gentle breezes that were blowing on that date and for a few days in succession for that matter. Methinks that they would be ready to admit that we have some wind here in Ontario and that it was cold enough too. On the night of Jan. 11 we had a light snow-fall from the east with moderate temperature, and then about 8 o'clock A. M. of Jan. 12 the wind changed to the southwest, the temperature dropped to 15 below and the wind had a velocity of 60 miles an hour. This continued for over 48 hours giving us the coldest and most severe storm on record. Many hives of bees were fortunately covered up with snow but others facing south and having no protection from that direction,

had the snow swept into the entrances with such force that it was driven up among the combs and the space under the combs packed solid. Our hives are lower in the front than in the rear so that in most cases the snow thawed and ran out of the entrances but in a few hives we had to clear the entrances of ice.

How this continuous cold weather (no change at this date, Feb. 2) will affect the bees outside is still a matter of conjecture but it looks as though the cellar winterers will have their innings this season. Two-thirds of our bees are almost completely covered with snow, many of the hives with snow over the tops two feet or more deep and this snow is solid too. But I have better

hopes for them than for those all uncovered, as I find after having dug down to a couple that quite a large open space has thawed around the front and the entrances of the hives and that the bees are quiet. Should we have mild weather soon, conditions would be greatly improved but we have no signs of such weather yet.

While I have the floor I would also like now to say to the two aforesaid gentlemen, that this year will prove again the fallacy of providing a "winter nest" for outdoor wintered bees. Do all you can in the fall to get rid of the "winter nest" and the bees will get along splendidly, even if combs are about solid at the beginning of the winter.



TEXAS is able to join in the chorus, "This is the

IN TEXAS

F. B. Paddock, State Entomologist

hardest winter in many a year." The cold weather of January was a record-maker. From the prospects at this writing it looks as if the drouth record of the past two years will be equalled, if not surpassed. The unusual snows have resulted in some good, for in a few localities the spring weeds have been able to get enough moisture from the snow to germinate.

In the extreme southern part of the State brood rearing began by the first of February, and, altho the honey prospects were only fair at that time, the bees were gathering considerable pollen. In the extreme western section of the State an early spring was enjoyed. The winter rains were enough to give an early flow of honey.

Wherever weak colonies went into the winter they are dead now; the extreme winter was more than they could withstand. The beekeeper who says, "I do not know how my bees are—I have not seen them since last fall," will have a surprise coming when spring inspection is finally made. There are others who did no feeding as they expected to sell the remains of their apiary this spring. Such beekeepers will not realize a penny. From every section comes the report that all bees that were not fed died at least during the late winter. Some of the "gum" beekeepers have felt that this spring would be a good time to sell their bees and they are due for a disappointment. With fair offerings of bees in most every locality, the question arises as to the price to be expected for a hive. Those who are buying are not in a mood to give much for most of the colonies that are for sale.

Spring management is a term that is new to many of our beekeepers. Yet during the latter part of January in the southern part of the State some of the beekeepers had examined their colonies and learned the exact

condition of every one. Much can be done in the early

spring to save the weaker colonies and to get all started so they will build up readily for the early honey flow. In some instances there will be found to be an excess of stores on a few hives and this can be distributed among several of the weak colonies. Many a colony of bees has been saved by a frame of sealed honey. Those who are not so fortunate as to have excess honey in frames or otherwise should plan to feed an artificial feed. Those who have the most bees are usually the ones who are most anxious to save every possible colony. Feeding on an extensive scale was conducted by some in the southern part of the State during the latter part of January and thru February.

A meeting of the county apiary inspectors of Texas was held at College Station on Feb. 11 and 12. This conference of inspectors resulted in great good to all in attendance, and was considered a big step in the scheme of general improvement of the inspection service. The meeting consumed two days, during which time several profitable lectures were given and experiences were exchanged.

Sugar for the feeding of bees is still available thru the Texas Honey Producers' Association of San Antonio. Not enough beekeepers are availing themselves of this opportunity to obtain sugar with which to feed their bees. Empty hives can not produce honey during the season of 1918 with which to aid the sugar shortage of the world. Never in history has honey been so popular as it will be during the season of 1918, and every effort should be made to produce every pound possible.

Frank C. Pellett, staff correspondent of the American Bee Journal, on Feb. 20 began a seven-weeks tour of the State. He is to

make a study of apiary conditions in every important beekeeping section of Texas. At every place where a meeting can be held Mr. Pellett is giving a lecture under the auspices of the county demonstration agent and the county beekeepers association. Much good will result from this trip, as many beekeepers will avail themselves of the opportunity to talk with Mr. Pellett, and he will be able to see and better understand the beekeeping conditions of this state.

The pound-package trade of bees is attracting the attention of many beekeepers all over the state. This business reached large proportions last year thru the efforts of Dr. E. F. Phillips to equalize the honey shortage of Texas with the bee shortage in the Western States. Many beekeepers last year were not in a position to ship bees on account of the lack of cages. Many who did ship in the available regulation cages were far from satisfied with the results. Since last season the larger shippers have put much thought on the problem of cages, and now we find that several styles will be seen in the trade this season. As a rule, these cages will be considerably larger than those used last year. The prevailing idea was that some of the loss last year was due to lack of ventilation. There is a tendency to adopt the syrup feed and to discard the candy feed. All of the shippers agree that

with the best of facilities for handling this trade it can never develop until they have the co-operation of the express companies. Negotiations have been conducted with the express companies with a view of bettering the service given the beekeepers in this trade of pound packages of bees. The committee representing the beekeepers has met with excellent response from the express company, which seems willing to learn all that is possible about this comparatively new industry in order that it might further develop. Suggestions were submitted to the company on the care in handling this commodity. These will be sent to all of the agents and messengers. In turn, a uniform label was suggested to the beekeepers which contains the chief points in the care of these packages. Assurances were given that claims coming to the company from this trade would be more readily adjusted in the future than they have been in the past. The importance of this industry has not been fully realized by all of the large beekeepers of this State. This trade is fast passing the experimental stage, and, with the help of the express companies, the transportation troubles will be removed. The demand for pound packages of bees will not be met by the beekeepers of this State this year. This trade offers possibilities which should be especially attractive this year when the honey prospects are not particularly promising in some localities.



ON Feb. 1, the Tennessee Beekeepers' Association

met in annual convention in Nashville, at the Hotel Hermitage. Owing to weather and transportation conditions, several hoped-for speakers did not arrive. Chief among these was Dr. E. F. Phillips, who did, however, send a telegram explaining these conditions as the ones that detained him, expressing his regret and advising beekeepers to buy up any non-productive colonies of bees of which they might know, and work them hard for a big honey crop this summer. Others who couldn't get to the meeting to take their places on the program, sent in papers to be read, and so added to the general interest of the occasion.

Dr. J. S. Ward, president of the Association, as well as State Inspector, presided, and in his opening address he gave the key note by stressing the necessity for better beekeeping and closer co-operation. E. J. Adkisson of Nashville presented an excellent paper on "Transferring." This is an important subject in Tennessee, owing to the large number of box hives still in use, and it was ably handled by Mr. Adkisson.

A particularly fine and impressive talk was the one on "Honey is Better Than Sugar,"

THE DIXIE BEE

Grace Allen, Nashville, Tenn.

by Miss Geneva Conway, Specialist in Home Economics, Division of Extension, Knoxville.

This important subject was handled with the convincing skill of one thoroly conversant with the matter in hand. When Miss Conway finished, there was no doubt in the minds of her hearers as to the superiority of honey over sugar.

Mr. Ebb Thomae, County Agent, spoke of the increasing interest in beekeeping among the farmers of his (Davidson) County, mentioning his own effort to bring the subject prominently and favorably to the attention of farmers not yet interested. Talking on "Tennessee Queens," Ben G. Davis was of course perfectly at home, discussing many methods followed in his own and his father's queen-rearing yards.

But the special feature of the convention was the presence of E. R. Root. In fact, Mr. Root was without doubt the one big splendid feature of the day. Everyone was glad that the weather conditions did not deter him from coming, as his presence and his illuminating talks made the occasion one long to be remembered by all those fortunate enough to be present. If there was any subject that Mr. Root did not touch on voluntar-

ily in his remarks, it was sure to be brought out by some one's question; and politely, pleasantly, enthusiastically, Mr. Root answered them all. And they were many, likewise varied. Particularly pleasing were Mr. Root's personal reminiscences and his references to some of his father's experiences. Then thru it all there was his unfaltering and contagious enthusiasm, and his never failing friendliness.

Referring again to black locust, which I mentioned in January as being rapidly cut out in this section, I notice in a daily paper that the Forest Reserve, to prevent confusion in identity, is calling attention to the differences between the black locust and the honey locust. "In some localities, the names applied are exactly reversed, the honey locust being known exclusively as black locust, and the true black locust being known as honey locust." It really isn't strange that the black locust is sometimes called honey locust, for it is the nectar-bearer, worked by the honey bee, while the only claim of the honey locust to its name lies in the gummy sweetish deposit in the ripe pods. The true black locust (*Robinia Pseudacacia*) has close-grained, durable, very hard wood, compound leaves with smooth margins, short thorns arranged in pairs, and seed pods from 2 to 4 inches long. The honey locust (*Gleditsia Triacanthus*) has coarse-grained wood of an inferior quality, leaves of the compound type but scalloped along the edges, thorns several inches long, often divided into three or more branches and often in great clusters on the main trunk, and pods from 10 to 18 inches long. If the wooden ship program is to be abandoned, the demand for black locust may slacken, as it has been used for treenails to fasten the planking to the ship's ribs.

What does one say when the weather grows quite out of bounds of polite conversation, and there are no conventional

phrases left that fit the need? That is my present trouble. It had seemed as tho this winter, from mid-December to date, deserved comment as lengthy as vigorous. But somehow I can't find the words. However, it is the undisputed truth that we have had some weather. The thermometer, repeatedly flirting with zero, repeatedly fell. "Ten degrees below," the weather bureau reported one time, and various lesser degrees below at various other times. Now 10 degrees below zero is a most un-Dixie-like temperature. I wonder how the Dixie bees have fared thru these weeks of frozen weather. This winter should surely be a test of wintering conditions. Altho I don't know but a warmer winter, with a great deal of rain instead of a great deal of snow, might be worse; or a winter with more frequent variation of temperature, and more damp, thawing days, might also be worse. We await the spring with keen interest.

Go way, zero, don't you see
I'm an unpacked Dixie bee?
Freezin blizzards aint no fun—
Wind breaks? Aint got nary one.

* * * * *

Mr. Root sez some folks thinks
That its morally surprisin
Bout the bees in winter time
Bein bugs on exercisin!



Dixie Bees in January, 1918.

A WEEK of
warm weather has at

last brought the Florida bees to life, and they are now hustling after water and bringing in heavy loads of pollen. It was too cold in January for them to work in the maples, but now the jasmine, willow and huckleberry are in bloom. The wild cherry and plum trees are in bud, the orange is showing the first signs of new growth, and everything points to the coming of spring and a busy season with the bees. Let us hope that it will be a more prosperous one than 1917 and 1916.

The unusually cold winter has left bees here in first-class condition. They have used

IN FLORIDA

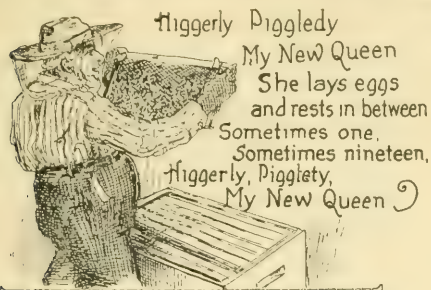
Reported by Harry Hewitt

much less winter stores than usual; the colonies seem strong as they were in the fall and there are no piles of dead robber bees in front of the hives. The orange groves are in fine shape, and prospects were never better for a big bloom. Whether we get anything from it remains to be seen. Yesterday (Feb. 5) I was in the apiary and heard a queen in the air. I chanced to stop at the right hive and saw her alight. She then took two other short flights before finally entering the hive. This was an old queen, raised last September—not a virgin. What was she doing in the air at this time of year?

HEADS OF GRAIN

FROM

DIFFERENT FIELDS



*There was an old Drone, and, what do you think?
He lived upon nothing but nectar to drink!*



*Honey and Pollen were the chief of his diet,
And yet this old drone could never be quiet.*

Great New Fields That Invite the Beekeepers' Attention.

I live in southwest Wisconsin where, during the last 10 years, the white clover has not failed to yield a fair-to-good crop of surplus. In Grant County, just across the Wisconsin river from my home, there are only two or three extensive beekeepers. The district is hilly, the soil rich and the whole face of the country is covered with white clover, while in places there is quite a sprinkling of sweet clover. It is capable of producing large amounts of the very best honey, but the bees and beekeepers are lacking. The same can be said of the whole of southern Wisconsin. Yet it is a question whether southern Wisconsin, with its pastures of white clover and clear spring brooks, is a better field than the central parts of the state and parts farther north.

I am informed that in Wood county, a considerable amount of honey is often secured from white clover and basswood, and after they are gone that colonies sometimes store 100 pounds of surplus per hive from the asters and autumn flowers. Great marshes will be covered with this bloom that produces a light amber honey that is preferred by some to the clover and basswood honey.

North of Iron Mountain, Mich., across the Wisconsin line, are a great many acres of

cut-over land. It is rather rough and there is lots of granite, but I have never seen the clovers grow so profusely as they do there, and right in the brush, too. In the more open spaces there were great sheets of white clover all out in bloom and standing 12 to 16 inches high. Nearby there might be another great patch of alsike all out in bloom among the brush. The cut-over lands were covered with yellow and white sweet clover as well as mammoth and common red clover. There were other clovers that I had never seen before, all in bloom—and not a bee in the country, and very little live stock. Now, how would such a country as that be for honey production, considering also that there were a great many splendid hard maples and basswoods in the forest? It seems to me there is the chance for a fortune for any one who would put in some good apiaries in that country.

Recently the bee journals have told us about great districts in the South where sweet clover has covered hill and dale, making it a grand country for beekeeping. Also we are informed that in the region northwest of Sioux City, Iowa, stretching thruout the western part of the Dakotas, in what is known as the dry belt, the sweet clover is taking the country for the country's good. This will be a splendid field for beekeeping, as dry weather is always best for honey secretion. Thus we have in widely separated districts of our land, openings for thousands of apiaries. If honey is going to come into general use, more young men and women must be induced to devote their time to its production, and where is there a more inviting field today?

I feel sure that some one, yes, as many as possible, should go to work to save some of the honey that is going to waste in these splendid fields that I have mentioned. The world wants honey. Are we going to supply it?

Bridgeport, Wis.

Harry Lathrop.

How a Breeder Could Have Saved a Customer Trouble

After reading in the December issue the different breeders' experiences, I write you from the purchaser's view point. Last spring I decided to try some bees in packages from the South and compare them with my bees wintered outdoors. I ordered one five-pound and two one-pound packages, with queens, to be delivered April first. They arrived Apr. 14, in fair condition, with the queens in separate cages. After some difficulty I opened the cages and found the queens in the mailing cages dead in the five-pound package and one dead in one of the one-pound packages. As I did not like the idea

HEADS OF GRAIN FROM DIFFERENT FIELDS

of the delay necessary to get the other queens from the breeders, I decided to unite with several of my weaker colonies. It was about 5 p. m., weather fair, no wind, temperature about 50 degrees. I sprinkled the bees with thin sugar syrup and shook the one-pound and also the five-pound package. In both cases fighting followed, which resulted in both queens being killed. The next day the package having the live queen, I shook onto drawn combs partly filled with pollen and honey and freed the queen. I also gave them the brood with adhering bees from the hive containing the pound package that had just killed their queen. After removing the frames I noticed a small cluster on the bottom-board which I shook on top of the frames—when, lo and behold! the cluster contained a virgin queen. I caged her immediately, as she was the cause of the destruction of the original queen in the hive and also of the one in the cage. An examination of the five-pound package also revealed two virgins running over the combs. The breeders no doubt had their troubles last spring, but those at my end of the line could have been avoided by the shipper's pasting a direction slip on the cage advising which end to open and cautioning to look out for queens being loose among the bees in the package. They surely had had this trouble before and should have given warning accordingly.

Baltimore, Md.

M. R. Delaney.

Beekeepers Get Sugar for Feeding Just the Same.

Beekeeping in Switzerland could not long be carried on without liberal feeding of sugar for winter stores every fall. The conditions for beekeeping are not nearly as favorable in Switzerland as in the United States. The seasons seem to be so short in Switzerland and the honey flow so early that only by the very best management with extra strong colonies of a non-swarmling race can surplus honey be obtained. Most of us honey-producers would miserably fail, if

our honey-flow came in May and then ended. The Swiss beekeeper must figure closely. His bees must winter perfectly, must not swarm and must fill the extracting supers before June. The colony of bees that does this is not likely to store much honey in the brood-chamber, for a good colony will keep the broodecombs full of brood during May to the exclusion of stores, and when fall comes the beekeeper finds no stores whatsoever in these broodnests, and must resort to feeding substitutes. This has become such a universal practice that provisions are made by the Swiss government so that 15 kilos of sugar (33 pounds) per colony for feeding purposes has been supplied to the beekeepers at a low cost. At present, the beekeepers are handicapped in Switzerland as much as we are in America. Sugar cannot be obtained in sufficient quantities to meet the demands of the people even for table use, let alone for bee-feed. Yet the Swiss government has granted the beekeepers an allowance of eight kilos (about 17 pounds) per colony. I suppose the beekeepers had to fight for this allowance for they could not show that they produced enough honey to offset this expenditure of sugar. In fact, they made but little attempt along this line, but laid most stress upon the fact that the honeybee was a most necessary factor in the economies of horticulture, as distributors of pollen, without which fruit culture would suffer immensely. This seems to have been the convincing argument with the Swiss government. The advice is given in the leading bee journal of Switzerland to take only good colonies into the winter, to unite weak ones, to weed out unproductive stock and to supply the selected colonies with sufficient stores but in fewer combs, six or eight at the most. This is along the same line as advocated in American bee journals, a practice which had followers here 30 or more years ago. In uniting colonies it is advised to hold the to-be-united bees separated at first by wire screen; then let them unite by the candy method.

Naples, N. Y.

F. Greiner.



Better Beekeeping is Coming Fast in North Carolina. Above is Printed a Picture of the Members of the N. C. State Beekeepers' Association Who Attended Their State Convention Held in January.

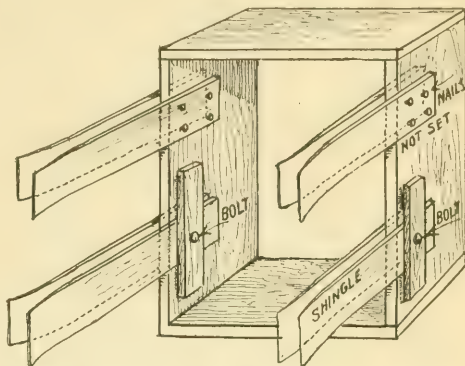
HEADS OF GRAIN FROM DIFFERENT FIELDS

Effective Form for Nailing Supers.

For a form I make an absolutely square super and nail the corners solidly. On the

sides of the super I nail eight common shingles, (or other thin material) as shown in the illustration. The curve in the shingles (such as we have) makes the insertion of the sides of supers, to be nailed, much easier. If thin, straight material is used it would be better to chamfer the ends for an inch or two so as to answer the same purpose as the curve in the shingles. In case a good many supers are nailed each season a permanent form should be made. For this, four pieces of 1x2 in. material about 16 ins. long and four 1/4x4 carriage bolts are needed. The strips are bolted, one on each inside and one on each outside of the form-super, over the shingles, as shown in the illustration. The continued shoving of the sides, to be nailed, between the shingles will loosen them in time if only nails are used, but when held by the strips and bolts, the shingles will stay rigid until worn too thin to hold the sides snugly. When using the form, I nail or bolt it to the table about a foot from the edge where I stand, place a pile of sides on one side of the form-super, a pile of ends on the other and a shallow box of nails on the top. Then I am ready for business. I take two sides, one in each hand, shove them in place between the shingles and tight up against the form. Then I put on an end, nail it from the top, grasp the sides again, pull them out, reverse them

by letting the nailed end drop over toward me, shove back into place again and nail the other end. When I pull it out, it is ready to lay on its side and nail, and I am sure of a perfectly square super without troubling



Simple, Inexpensive and Time-Saving Form for Nailing Supers.

to put the square on it. Moreover, the form only takes five minutes to make and yet it enables one to work twice or three times as rapidly as without it.

E. C. Hardie.

Burford, Ont.

That Hot-Wax Method of Stiffening Foundation.

On page 12, January Gleanings, is described a method of stiffening foundation by painting it with hot wax, as reported by J. W. Tinsley, of Ames, Ia. While I do not know how Mr. Tinsley applied the wax, I can say that in my experience, strengthening foundation with melted wax is anything but satisfactory, in general. Last spring I had 750 frames filled with foundation, and tried running beads of wax from top to bottom of a few sheets with a wax tube. The result being satisfactory, I treated the whole lot in the same manner, putting on from three to five beads to each sheet, but had cause to regret it soon. While it was a success with a few colonies, many of them built burr combs out from the beads, and most of them built a large number of drone cells along the re-enforced places. So it may be best for any one trying the method to be conservative.

Lebanon, Ore.

H. E. Weisner.

Comes to the Defense of the Peterson Melter.

After reading J. L. Byer's opinion of the capping-melter on page 935, December Gleanings, I would like to say I have been using the Peterson melter for four seasons and think it a great success. In fact, it doesn't



A Beehive at York, Pa., That Might as Well be an Ice House.

HEADS OF GRAIN FROM DIFFERENT FIELDS

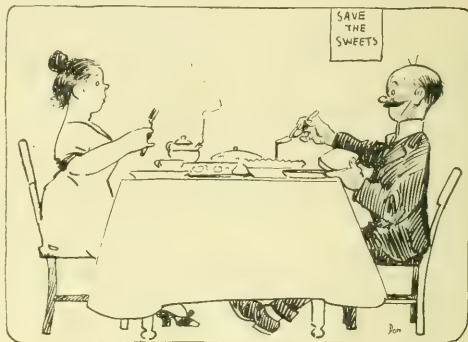
seem as if I could get along without it. Mr. Byer says the honey that goes thru the melter has a "slightly cooked flavor." Yes, it has, but it is not very pronounced, if the melter is run right. If this honey is mixed with that which comes from the extractor it is so slight that we doubt if one person in a thousand would know it. From the thousands who have eaten our honey we have yet to hear any complaints. One time I sent a sample to the Colorado Honey Producers' Association. They said the body was good and flavor fine. I can't understand how he could have the troubles he tells about—waxy particles clogging up strainers and getting on the inside of the tank, etc. The honey as it comes from my melter is in the very best shape to strain, it is warm and as clear as water. As to its being too hot to work by, that depends on the system of production one uses. With mine it is just what I need. He says he has been draining his cappings as best he could. I have been thru all of that—barrels, boxes, tanks, etc. No more of that for me. Of course there are a few kinks in running a melter, as well as anything else. I would hate to think I would

have to give mine up for some of the things shown from time to time.

Corvallis, Mont.

Frank Morgan.

[We feel rather inclined to agree with Mr. Morgan in his defense of the Peterson melter. The only chance for injuring the flavor of the honey is to allow the cappings to dam the melter, thus retaining the honey too long in the melter.—Editor.]



Adam Leister's Apiary Near Gleanings' Home. That Furnishes the Editors Much Valuable Data. It is Located on the South Slope of a Hill, and is Shown Here as It Appeared in Early February.

"ENCLOSED find nine shillings, nine pence, for subscription to *Gleanings*."—L. W. J. Deuss, Prisoner of War, Fort Johnston, Nyasaland, Africa.

"Severe weather on bees. Expect heavy loss."—Chas. Cargo, Gallia Co., Jan. 11.

"My bees have been snowed under about 15 inches ever since Dec. 1."—A. M. Winn, Grays Co., Ky., Jan. 23.

"I can't help but feel sorry for the man who has all the bees he wants."—J. J. Wilder, Manatee Co., Fla., Jan. 15.

"Three of us meet every Friday night for study and discussion of beekeeping."—Henry T. Martin, Carter Co., Ky., Jan. 24.

"All bees in this country are in boxes and logs. 'Bees ain't no good here,' is the general remark."—J. H. B. Hall, Shelby Co., Ala.

"Clover conditions are very favorable and I am dreaming of a bumper honey crop."—Eugene Busler, Washington Co., Ark., Jan. 23.

"Sixty per cent of my colonies are dead. I believe this condition will be general in this locality."—Daniel Love, Worcester Co., Mass., Jan. 19.

"A life like A. I. Root's ought to be held up as a shining example to the youth of the whole country."—B. R. Stannard, Pittsburgh, Pa., Jan. 10.

"Among my outfit is a Langstroth-Root portico hive that has been in constant use since 1872. How is that for lasting?"—S. B. Myers, Memphis, Tenn.

"A good yield of both grain and honey has been produced in this valley when rain held off until March."—S. A. Niver, Monterey Co., Calif., Jan. 17.

"My bees had a good flight on Jan. 24 and 25 for the first time in two months. They did not get it any too soon."—M. B. Gill, Logan Co., Ky., Jan. 28.

"Bees are doing finely so far; had no snow until Jan. 10, and the mildest winter we have ever had."—Mrs. Margaret Green, Washington Co., Idaho, Jan. 15.

"I predict heavy winter losses in this part of country. One reason is a very poor quality of honey and not enough of that even."—Amos Miller, Tuscarawas County, O., Jan. 2.

"The largest yielders of honey in Cuba are in this order: First, campanilla blanca or aguinaldo; second, royal palm; third, sugar cane."—Urbano Trista Perez, Santa Clara, Cuba, Jan. 4.

BEES, MEN AND THINGS

(You may find it here)

"Bees have been gathering nectar all winter from eucalyptus. Two swarms issued last Saturday, Jan. 26, in this vicinity. All colonies busy storing pollen and brood-rearing well advanced."—Allen Jenkins, Los Angeles Co., Cal., Jan. 28.

"We sell nearly all of our honey right at the house in 50-pound lots or less, and have received 25 cents per pound for all we have sold this season."—D. D. Piper, Butler Co., Kans.

"There is no use of my saying anything good for you because all that has been said, and there is no use of me saying anything bad for you have already heard that."—Oscar Dines, Syracuse, N. Y.

"Please send me a smoker of large size with a light spring. Remember that the light spring is the indispensable thing."—Dr. C. C. Miller, Marengo, Ills., to the A. I. Root Co., July 2, 1917.

"I have enlisted in the Signal Corps, Pigeon Section. The pigeons were my first love, so naturally I turn to them now. I have let my bees out on shares."—Leland B. Davis, Sonora Co., Cal., Jan. 20.

"My bees are wintering very nicely in my cellar, but I fear for unpacked bees outside, as there have been seven weeks or more of continuous cold weather."—Harry W. Beaver, Bradford Co., Pa., Jan. 25.

"Bees are dying all over this locality. Every day some person asks me about their bees being dead or out of stores. Extreme cold during December and January."—Fred H. Drury, Putnam Co., Mo. Jan. 25.

"In our immediate locality I think bees have been fed as much as heretofore; but the severe winter will likely cause a heavy loss to those who winter outside."—Earl M. Nichols, Franklin Co., Mass., Jan. 28.

"Have had only one-fourth inch of ice twice this winter and frost but a few times. Have had excessive rains with warm weather. Bees appear to be wintering well."—J. J. Crydennan, Skagit Co., Wash., Jan. 18.

"Honey is the one crop of importance which does not need to be sown or cultivated, but needs only to be harvested."—A. I. Root, quoting approvingly from B. F. Kidgig, State Inspector of Apiaries, Michigan.

"You will be interested to know that Tom, Jr., who has the whooping cough, is at present eating large amounts of honey and I find that it helps his cough considerably. I am doing quite a bit of experimental work with honey. Among other things I have found that it is absolutely delicious

for sweetening coffee."—Ida C. Bailey Allen, Specialist in Home Economics, New York City, Jan. 18.

"So far this has been a very hard winter in this section of the country, deep snows, very cold winds and even blizzards. A large beekeeper here says he believes the bees will freeze."—Claude Barber, Jasper Co., Mo., Jan. 20.

"I put 80 swarms in the cellar and they are doing fine. Temperature is 45, and on outside today is 20 below. We have about nine inches of snow. Hope this stays on as it protects the white clover."—W. W. Boutilier, Hancock Co., Iowa.

"My bees flew Nov. 15, but have not flown since. The blizzard of Jan. 12 covered nearly all of my colonies with snow, but the snow melted from the entrances and all colonies are still alive."—Will L. Tower, Oakland Co., Mich., Jan. 20.

"I have taken Gleanings since and before 'Blue Eyes' was a baby, and I can't do without it. I am up in the '70's and am the father of nine children, now scattered all over the United States."—J. W. Sweetwood, Soldiers' Home, Erie, Pa., Jan. 14.

"Looking for great things to come from America in connection with the great war to help us secure a great and lasting peace when the final blow has been struck against German brute force and barbarism."—S. T. Main, New South Wales, Australia, Dec. 1.

"Wherever the raspberry flourishes the honey bee will be found when it is in bloom. Seeing a thatch in blossom at my daughter's place suggested to me that here is a fine plant for waste places in all parts of the country."—Dr. A. F. Bonney, Buck Grove, Ia.

"There is a big opportunity for beekeeping in Montana, but some experimental work should be done to make somewhat more definite the information on wintering of bees and for some other purposes."—R. A. Cooley, State Entomologist, Bozeman, Mont., Jan. 25.

"Today we are having the first good rain for this season. Not in 16 years has the rainy season lagged so far behind. Good rains in February and March will make the outlook for bee men very promising."—G. W. Bercaw, Los Angeles Co., Calif., Jan. 26.

"I have extracted 30,000 pounds of honey since the first of November last during one of the coldest winters that the South has experienced in a long time. Have realized 13 cents per pound in barrels, F. O. B. Shreveport."—G. Frank Pease, Shreveport, La., Jan. 29.

"The Snake River Valley is experiencing an extremely mild winter, the result of which is that the bees are in fine shape. Last week the bees had a full flight. Made a trip around my yard and failed to find any

colonies that showed the least sign of suffering from confinement."—R. D. Bradshaw, Canyon Co., Idaho.

"It seems that all books on bees are written by Northern beekeepers, and some fellow down South said that a 10-frame hive was not big enough for us. Well, it seems he is right. My bees are ready to swarm by May 1."—J. Lloyd Sterling, Somerset Co., Md.

"Bees in bad shape down here, I am afraid. Poor flow last fall; could not buy sugar, and the coldest winter ever known. Zero again this forenoon; has once been 8 below. Only one flight since early December."—Parkin Scott, Hanover Co., Va., Feb. 6.

"There is no question in my mind that the spring of 1918 will find pound packages as well as whole colonies of bees higher. Therefore it behooves us to take the best possible care of our bees now and to build up wisely in the spring."—Lewis L. Winship, Erie Co., N. Y., Jan. 21.

"I found a large, tame silver gray bee working peacefully right under the roar of the cannon and am bringing two home. They may be the famous Hymettus bee; anyway, Mt. Olympus is plainly visible across the bay."—Francis Jager, American Red Cross, "Somewhere in Greece," Oct. 7, 1917.

"Today for the first time in eight weeks it is warm enough to look thru my bees and note conditions since early December. We have had continued cold weather. We have no trouble in getting all the sugar we want here at 8¼ cents. We are asked no questions."—S. A. Fuller, Phillips Co., Ark., Feb. 3.

"Luckily I always leave six full combs of honey above besides what they have below, and I think it pays big, for if the bees do not need it it can be extracted in the spring. It is unusual that at this time of the year there are no wild flowers in bloom or started growing in this section."—Francis J. Calahan, San Diego Co., Calif., Jan. 22.

"In December of 1882 and January of 1883 cattle and sheep were starving in the hills and pastures; and then February, March and April rains gave us a fair flow of nectar. Reports come in now of stock starving in the hills. Beekeepers need not worry over the rains holding off."—M. H. Mendleson, Ventura Co., Calif., Jan. 8.

"Held a meeting at Bradentown, Fla., where your father and I talked. Most of the things I advocated from the government standpoint, your father endorsed as what he had been preaching for 30 years. Wonderful opportunities at places in Florida, but much of it is poor bee country. I have never seen more apathy to better methods than most Florida bee men show."—Kennith Hawkins, Special Agent in Apiculture, to E. R. Root, Jan. 16.

THE beekeepers of Lawrence County, Pa., have effected an organization with the following officers: John Wilkinson, president; Chas. G. Linder, vice president; Louis Hawthorne, secretary-treasurer.



beekeepers' societies thruout the Gopher State.

and St. Paul so as to promote competition among buyers in the purchase of these lots of honey. Serious effort is being made to form local and county

The Pennsylvania State Beekeepers' Association will hold its annual meeting on March 15 and 16 at Lancaster. H. A. Surface, president, promises an excellent program.

The 15th annual meeting of the Missouri Apicultural Society was held at Columbia, Mo., during Farmers' Week, Jan. 15 to 18. There was a full program for beekeepers prepared for each of the four days.

The Broome County, N. Y., County Beekeepers' Association has been formed with the following officers: C. Willis Phelps of Binghamton, president; Earl H. Pratt of Triangle, vice president; Otto W. Gall of Binghamton, secretary-treasurer.

At the annual meeting of the Colorado State Beekeepers' Association held at the Agricultural College at Fort Collins, Jan. 15-16, during the Colorado Farmers and Farm Women's Congress meeting, the following officers were elected: W. P. Collins of Boulder, president; J. N. Pease of Littleton, vice president; Wesley Foster of Boulder, secretary-treasurer.

The Nebraska Beekeepers' Association is endeavoring to better its organization. At the January meeting held at Lincoln, the following officers were elected: S. J. Harris of Lincoln, president; Geo. O. Olson of Wahoo, vice president; O. E. Timm of Bennington, secretary-treasurer. A committee was also selected for the purpose of getting new members and creating new interest in the Association. It was decided to hold a meeting during the State Fair, when authorities on beekeeping will give instruction and a report from committees will be had.

L. V. France, secretary of the Minnesota State Beekeepers' Association, states that arrangements have been made for each member of the Association to receive the United States Market News Bulletin on honey every two weeks from Washington. Arrangements have also been made so that members reporting to the secretary the honey they may have for sale, giving quality, amount and how prepared for shipment, will receive honey-price information, and the fact that they have honey for sale will be reported to several reliable honey buyers at Minneapolis

Up to the time of going to press, Gleanings had not received the completed program for the annual meeting of the National Beekeepers' Association to be held at Burlington, Ia., Feb. 19 to 21. The president of the National, Francis Jager, has written that he expects that he will be leaving for Europe about the time of this meeting with the second Red Cross Mission from the United States to Serbia, and regrets that he cannot be present.

The Panhandle Beekeepers' Association will hold the spring meeting at the Market Auditorium, Wheeling, Feb. 27. The West Virginia State Association will meet Feb. 28 at Wheeling. The speakers will be: Adam Y. Yahn of Triadelphia, who will demonstrate a Langstroth hive; T. K. Massie of Hatcher, president of the West Virginia State Beekeepers' Association, who will demonstrate the Massie hive; William A. Seaman of Wheeling, who will give a talk on sweet clover; and E. R. Root of Medina, who will address the meeting on a selected subject.

The Ohio State Beekeepers' Association, at their convention held in Columbus in January, passed a resolution embodying the following request: That the Ohio Division of the Food Administration devise some means by which beekeepers of the State could secure sugar to the extent of one or two pounds per colony to feed; every pound of sugar so fed being likely to return 10 or 20 pounds of honey. The resolution stated that unless something was done at once thousands of colonies would starve and an important source of sugar supply would be cut off.

The report of "Honey Production in British Columbia for the Season of 1917," by F. Dundas Todd, foul-brood inspector, states that the average per hive was 51 pounds, of excellent quality, and that this product sold readily at 20c a pound wholesale and 25c retail. The report states that British Columbia lost half her bees in the winters of 1915 and 1916, and strongly urges better winter protection thruout the province. The total crop of the province is estimated to be about 168 tons. The report indicates that there is plenty of room for many more beekeepers in British Columbia and that her beekeepers should average a larger amount of colonies each than at present.

QUESTION.—I expect to buy about 24 colonies of hybrid bees on more or less crooked frames in movable frame hives, transfer into new hives and frames and requeen with pure Italian queens at the time of transferring. Kindly tell me how I may do this and also save the brood that is in the old hives.

Wyoming.

F. C. Wilson.

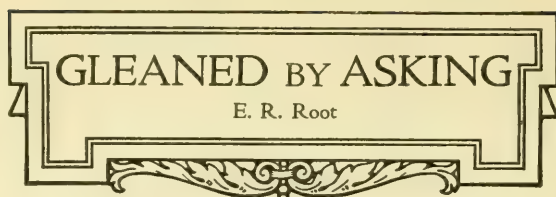
Answer.—The manner of transferring will depend entirely upon how badly the combs are criss-crossed in the old hive. If one is able to remove such frames, he may place on the old stand a new hive with an entrance guard and a frame of young larvæ. The latter should be placed in the center of the hive, and the remainder of the hive filled with frames of drawn combs, containing some honey, altho frames of foundation might be used if one intends to feed. The cage containing the queen to be introduced is placed over the frames of brood, or between two frames of honey. The frames from the old hive are then shaken in front of the new one, and the bees allowed to run in thru the entrance guard. The queen, not being able to get thru the guard, will be found in front of the hive, probably right in front of the entrance, vainly attempting to get thru. She should be captured and killed, and the entrance guard removed. The combs of brood are then placed above the new hive with a queen-excluding honey-board intervening. At the end of three weeks, the worker brood from the old hive will be hatched, and the comb may then be melted. Should it happen that the combs are very badly built, so that it is impossible to remove the frames, the best plan is to place the old hive of brood above the new hive, which should contain a frame of larvæ and some honey, then vigorously smoke the colony until the queen and most of the bees go below, when a queen-excluder may be placed between. After the bees are quieted, perhaps the next day, the queen may be found and killed, and the new queen introduced, according to the directions on the shipping cage. Three weeks later the old combs may be removed and rendered. If the weather is so cool that there is danger of chilling the brood, the above arrangement is very satisfactory, but during a heavy honey flow, one would hardly care to have a great quantity of honey stored in this old set of combs. In that case, it would be better to reverse the order and place the new hive above.

Question.—Will sorghum cane molasses be all right to feed for stimulative brood-rearing? If so, should it be diluted with water? Would it be better to mix half molasses, half extracted honey and dilute with water?

Tennessee.

J. K. Sledman.

Answer.—As soon as the bees are able to fly several times a week, it will be safe to feed sorghum cane molasses. For stimula-



tive brood rearing, it should be diluted with from 5 per cent to 10 per cent of water. Mixing it with honey is a good plan. We believe the proportions of 1/3

honey, 1/3 molasses and 1/3 water, would be about right. Converting sorghum molasses into bees will surely be worth while the coming season.

Question.—Will bees build up in the spring if fed diluted maple syrup? If so, about how much should it be diluted? Would the skimmings, taken off while cleansing the syrup, be just as good?

Ohio.

Earl C. Brockway.

Answer.—Maple syrup diluted with not more than 10 per cent of water would be fine for spring feeding. The skimmings, altho not as good, may also be safely fed.

Question.—In recent numbers of Gleanings is mentioned a plan of wintering by standing the frames on end. Now, at the time of unpacking, there is quite a lot of larvæ, all of them in their proper positions. Might it not hurt them to change their position by placing them on their sides?

Ohio.

Houston Scott.

Answer.—No. When transferring or patching old combs, the larvæ are often placed in any position that chances to be most convenient. Whether they rest on their backs, fronts or sides seems to be quite immaterial.

Question.—The last of January, it was very warm here and so we looked thru some of the colonies we thought might need stores, and in half of them we found brood. There was brood in all stages, some colonies having as many as three combs with patches of brood three inches in diameter. These colonies have not been disturbed before this winter and therefore we cannot understand the cause of this early brood rearing. Usually our spring doesn't begin until the last of March.

Kansas.

Weber Bros.

Answer.—Even in northern states, brood rearing may start as early as January, if the bees are disturbed in any way, or if a few warm days occur. Such untimely breeding is apt to result in the loss of the colony, for the undue activity necessary for keeping up the temperature of the brood causes quantities of stores to be eaten, and if the weather turns too cool for a cleansing flight, dysentery and death are likely to result.

Question.—In regard to the Demuth plan of wintering, is there not an objection to standing the frames on end? I have Danzenbaker hives and when I inverted the frames, the honey ran out. Don't the bees build the cells slanting downward? And wouldn't this cause the honey to leak if the frames were stood on end?

Ohio.

Will Sharpe.

Answer.—One of the first advantages claimed for the Danzenbaker hive was the possibility of inverting the frames. Altho there is a slight slant to the cells, the honey should not run out when frames are stood on end. If honey runs down the sides of the frames, it has not been properly ripened and

is much too thin for winter stores. However, your bees may survive the winter in spite of this fact. It will be a good plan to occasionally poke out the dead bees that accumulate at the entrance. In doing this, pains should be taken not to jar or disturb the bees.

Question.—If sown on abandoned fertilized wheat ground in April, would white sweet clover seed produce a hay crop the first season?

Ohio.

Chas. H. Cargo.

Answer.—White sweet clover may be depended upon to give a good hay crop the first year. Sometimes it is even tall enough to be cut in July, but since the crown sprouts have not started at that time, it should not be mowed close to the ground, as most of it would be killed outright.

Questions.—Will it do any harm to keep my bees in the cellar after those outdoors have had a flight? (2) Would the more or less noise from the family overhead interfere with their wintering in good condition?

Ontario.

J. N. Smith.

Answers.—(1) Even if those cellar-wintered colonies are cheated of one or two flights, it should cause no worry as long as they are wintering contentedly. At the opening of the first spring bloom the bees should be moved out providing the days are warm enough to permit several hours flight each day. (2) In Medina, we have successfully wintered bees under a machine shop where there was constant noise and vibration.

Questions.—Would it be advisable to make up the sections now and put in starters? What width would you put in, full sheets or one inch?

Ohio.

Robert Herrick.

Answer.—We prefer making the sections and putting in foundation a few weeks before they will be needed. The foundation usually is in better condition, and the sections not as apt to break. Still, many good beekeepers put up their sections several months before using and consider it makes but little difference. By all means use the full sheets, and we venture to say that you will never again be satisfied with mere strips.

Questions.—(1) I have nine colonies of cross bees which I wish to put into new hives. If I re-queen with Italian stock at the time of transferring, will I get pure Italian bees? (2) Would it be all right to make the change about the middle of April and then feed them sugar syrup until fruit bloom? (3) Also would it be safe to extract the honey from the old frames, and, after boiling, feed it back to them? (4) Did you ever try introducing a new queen by putting her in a cup of honey and pouring her down between the frames, and what kind of success did you have, if you did try it?

Pennsylvania.

Buel Buddinger.

Answers.—(1) Yes, if you introduce a tested Italian. (2) Giving a colony foundation early in the spring is a pretty cold arrangement. It would be better to wait until fruit bloom, especially if the spring happens to be a cool one. If put on foundation before any honey is coming in, they will, of course,

need to be fed. (3) Honey may be diluted, boiled 30 minutes in a closed vessel and then fed to the bees. But it is safer to re-boil it just before feeding. (4) Yes, we have introduced queens successfully by daubing with honey. There is no particular objection to the plan if one cares to give a nice queen such a treatment. We don't like this method of introducing, perhaps for no other reason than that it makes the queen both look

Question.—My hives of bees were all upset during cold weather and I am afraid I shall lose most of them. In that case I shall have to fall back on pound packages next spring. What must I do, if I want a honey crop in 1918?

Maryland.

Philip Barret.

Answer.—If you are desirous of a good honey crop the coming season, our advice is to order queens, bees and supplies as soon as possible. Realizing the necessary delays that will occur the coming season, many are even now filing their orders, and we believe it is none too soon for those who intend securing that bumper crop we hope for. The best plan is to buy colonies from your own locality. If this is impossible, it might be well for you to buy two- or three-pound package with queens. These you can build up by stimulative feeding and by giving frames of brood from other colonies.

Questions.—(1) When should the packing be taken off in the spring? (2) How late can the bees be safely moved a short distance in the spring?

Illinois.

O. E. Killgrove.

Answers.—(1) The packing should be kept on until settled warm weather, so there will be no danger of chilling the brood; the exact time will depend upon the season. Of course, it should not be kept on so long as to be in the way. Sometimes it may be necessary to keep it on till the last part of May. (2) If one wishes to move bees a short distance in the early spring, he should do so carefully and without jarring. In order that the bees may not return to the old location and be lost, one should make the removal during settled cold weather so that two or three months will elapse before the bees have a chance to fly.

Question.—My small colony of bees has already succumbed, leaving in the hive a small handful of dead bees and about one pound of sealed honey. As they were well protected, I cannot understand the cause of their death.

North Carolina.

C. G. Rogers.

Answer.—This is such an unusually hard winter that we are continually receiving just such reports as yours. Besides the good packing one should also consider the size of the colony, the nature and location of wind-breaks, and the quality as well as quantity of winter stores. Many bees will perish this winter from dysentery, caused by unripened stores, the small size of the colony, or insufficient protection. Others will starve with plenty of good stores in the hives, simply because the bees are too cold to move over a few inches to the stores. In the case of your

bees, we rather suspect they died of dysentery. They doubtless took a cleansing flight during unsuitable weather and thus died outside. This would account for the small number of dead bees in the hive.

Questions.—(1) People always advise keeping bees and chickens with fruit. Now in spraying fruit trees with arsenate of lead, will not the honey be poisoned and kill the bees and any person eating it? (2) And will not the spray falling on the grass also kill the chickens? Charles Goller.

Canada.

Answers.—(1) Spraying should be done before the blossoms open, and again after the petals fall. To spray during fruit bloom has been proved quite injurious to the pollen and reproductive organs of the blossoms as well as to the bees. The queens and brood are most quickly affected, altho whole colonies of bees are sometimes killed by the poison. (2) We have no record of any person having been poisoned by such honey and it seems probable that honey containing a sufficient amount of poison to affect a person, would kill the bees before they had a chance to store any surplus. Of course chickens would be poisoned by the arsenate of lead on the grass if they ate it, but we have never taken any special precautions in this respect and yet to our knowledge have never had any chickens thus injured. It is our opinion from some observation that chickens will not eat grass that has a deposit of arsenate of lead on it. There is always enough other grass beyond the reach of the sprayer that the chickens can get.

Question.—This winter I have been troubled with slush freezing at the entrance. Several times I have scraped it away just in time. How could one use a large apiary avoid losing bees from this cause?

Vermont.

R. L. Palmer.

Answer.—Hives should slope a little toward the front, so there will be no chance for water to stand in the hives. If there is sufficient upward ventilation, we would have no fear of the slush freezing over the entrance. In the first place, if the colony is strong, enough warmth usually escapes thru the entrance so that it is not closed with slush. When good colonies are buried in snow, there is nearly always a melted space in the snow just in front of the entrance and extending up the front of the hive. In those cases, in which the entrances are closed with ice, good upward ventilation leaves the bees in a perfectly safe condition. If non-porous covers are used, it will be necessary to keep the ice cleared from the entrances in order to avoid smothering the bees. To prevent ice from thus collecting, there should be no ledge under the entrance, for in a winter like the present, the ice may gradually pile up until the entrance is completely shut off. If there is an alighting board, it should be shoved back so far that there is no projection in front of the hive. Straight down from the entrance there should be a sheer drop of at least two or three inches.

Questions.—The combs the bees have in the cellar are moldy. Will this do any harm? And can I

use the combs in spring? (2) When bees need pollen and are unable to get it in the spring, what should they be fed? (3) Would it be all right here in Wisconsin, to set my bees out in March and put on winter cases?

Frank Beran.

Wisconsin.

Answers.—(1) We would much prefer that the bees should not have moldy combs, and if the case is very bad, we would replace the combs; but ordinarily removing the cause will be all that is necessary. Evidently the stores were unripened, the cellar too damp, or the hives or cellar not sufficiently ventilated. Such combs may be used in the spring with no danger whatever. They will be cleaned in a short time if they are distributed to various brood chambers or placed under strong colonies. (2) Different flours and meals have been used for this purpose. Equal parts of rye and oats make a very good artificial pollen. Ordinarily such feeding is unnecessary and often a real detriment and should not be resorted to except when the bees are in actual need and refusing to be satisfied with water, continue their vain search for a pollen substitute. (3) Yes, if desired. However, many prefer to wait until settled warm weather and then use no winter cases. The condition of the bees should be the determining factor. As long as they are quiet and contented, nothing is gained by moving them from the cellar before the coming of the first pollen. We usually set ours out at the opening of maple bloom.

ANSWERS BY C. C. MILLER.

Questions.—(1) Will it be all right to get one pound packages of bees with a queen in each and put them in a 10-frame hive with one frame of sealed brood and the remaining frames with full sheets of foundation? How would it do to get one-pound packages without queens, put them in the same kind of hive, with one frame of eggs from another colony? I would like to do this the last week in April. (2) What do you think about a 20-frame brood chamber? I understand they use them successfully in Iowa.

Illinois.

Edw. J. Steinberg.

Answers.—(1) The first plan you mention is many times better than the second. Your pound of queenless bees in April would hardly be likely to rear a queen worth having. A good queen should have her start in a strong colony at a time when there is a strong honey-flow. It would likely be three weeks before the young queen would lay, and three weeks more before her progeny would begin to emerge, and during that six weeks most of the original pound would have passed in their checks. With a laying queen at the start there would be a different story. (2) The big brood-chamber with 20 frames, more or less, has been successfully used in this country under the name of the "long-idea hive," and is used much more in Europe. I don't think there is any special trouble in using it, but for one reason or another most beekeepers in this country would rather have the surplus department in a separate and higher story instead of in the same story with the brood.

C. C. Miller.

FOR the especial benefit of those persons who for the first time are turning their attention to bee-keeping, we intend, during the ensuing months, to publish a series of talks on the production of extracted honey. Each article will state concisely and clearly what, to us, seems the one most reasonable and best plan of manipulation for that particular month, in northern temperate latitudes. It is hoped that these few articles may add thousands of pounds to the world's sweets, for during the present sugar shortage, many people, knowing nothing about bees and yet having a few extra hours each week, will be glad to do their bit by purchasing at least two or three colonies and launching in the bee business.

We shall take up the subject of extracted honey rather than comb honey because its production requires far less skill and results in more money and a larger crop. The large combs being more in accordance with nature, than the small section boxes, the bees seem to greatly prefer working in them. Some seasons are quite unsuitable for comb honey production, since a short, heavy flow is necessary for best results. Moreover, very large colonies and limited super room are required to keep the super warm enough for the wax building necessary in comb-honey production, most of which building takes place at night. Now, large colonies and lack of room inside the hive are two of the main inducements to swarming. And, if allowed to divide (or swarm), neither of the two resulting colonies would be large enough to produce comb honey. Therefore, in order to prevent swarming the comb-honey producer is obliged to give his bees the very closest attention possible. It is evident that this requires the care of the specialist and not the beginner.

To those people who thoroly enjoy nature, who have the habit of close observation and an aptness for applying such knowledge as occasion arises; to those who are careful, orderly and not afraid of work, or of soiled hands or of an occasional sting,—to such we are ready to guarantee a decided success in the bee business.

Bees can be made to pay for themselves almost from the start, and for the additional apparatus needed in increasing the apiary, as well as show some profit besides. Of course, without having a fore knowledge of weather conditions, for the coming season, we can give no definite figures on the probable crop, but we should expect a colony to average anywhere from \$8.00 in a poor season to \$20 or more in a good one, at present honey prices.

An orchard is a fine place to keep bees, but since they fly for a distance of 2 to 5

TALKS TO BEGINNERS

By the Editor

miles or further, there is hardly a spot in the whole United States where bees cannot get some honey. For a suitable location, therefore, the small bee-

keeper need look no further than his own back yard, or lacking this, he may keep them even on the roof or in the attic.

Those just starting will find it a great pleasure and help, tho not a necessity, to read one or more of the beginners' books now on the market and also to subscribe for one of the leading bee journals. A large fund of necessary information may also be obtained from a study of the supply catalogs, which may be obtained for the asking from any of the beekeepers' supply houses, several of which are advertised in this journal. We know of a beginner who said he learned more about hives, tools and beekeepers' apparatus in general from a supply catalog than he was ever able to learn in any other way. In addition to this preliminary learning, it would be a great help to have a few heart-to-heart talks with a real "sure nuff" beekeeper who may live near.

To those contemplating this start in bees, we recommend that the needed supplies be ordered immediately, to avoid delays that are bound to occur later in the season. In order to assist the beginner in making a wise choice of supplies, we shall suggest a suitable outfit for the production of extracted honey. The real essentials are: One 10-frame hive-body, with wired frames containing sheets of comb foundation; two or three 10-frame supers just like the hive body; one floor-board; one inner cover; one outer cover; one bee-brush; one bee veil; one bee smoker; one queen excluder, and one hive tool. It will be noticed that this essential outfit just given includes only one complete hive with its two or three supers of frames. For a model outfit we would suggest an extra hive for a possible new swarm, with two extra supers, one two-frame honey extractor, and one uncapping knife. The reason we omitted the two latter from the essential outfit is because the honey need not be extracted at all, but simply used as chunk honey, or if one prefers extracted honey, there is in nearly every locality some large beekeeper who will be glad to do his neighbor's extracting for one cent per pound. It is evident that no small beekeeper could do it as cheaply as this with his apparatus. Still there is a pleasure and satisfaction in attending to the whole process one's self.

Next month, assuming the beginner's supplies to have been ordered and already on their way, our talk will contain a description of these same supplies and their uses, as well as a careful look-in to this same hive as it is to appear a little later when the bees have taken possession.

At our usual Wednesday-evening prayer-meeting, our leader, Rev. Dr. Hallock, gave out cards to be answered, and the one handed me read as follows:

"Do you expect that at the whole world will some day know and love Jesus Christ? Why?"

On account of my impaired hearing I have

for years been in the habit of getting as close to the speaker in any meeting as I can; and therefore when it came my turn to reply to my card I rose up, turned around, and spoke to the good people gathered there as follows:

My good friends, some of you may smile when I say, first and foremost, I expect "the whole world will some day know and love Jesus Christ," because the Bible says it will, and I refer you to our first text at the head of this talk.

Secondly, I believe the whole wide world will ultimately be converted to Christianity, because just now a thousand evidences point toward such a culmination.

Since the world began, the liquor traffic has been the greatest obstacle to the spread of the gospel; and just now, for the first time, it seems to be "losing its grip" on our business and politics—a grip that it has maintained for ages, in almost undisputed sway. In fact, for almost seventy years of my life I have seen it "jeer" at "temperance fanatics," as it was pleased to call us, and say by action, if not words, "Help yourself if you can." Well, almost as I speak (may God be praised!) our Government, both House and Senate, have come out with a large majority for nation-wide prohibition. All that is needed now is for three-quarters of the states to endorse this action. Twenty-seven states are already dry, and Ohio has already "rolled up her sleeves" to go into the fight to make beloved Ohio the first of the nine now needed to complete the victory. God grant that Florida (also "beloved") may be second in the list.

Just here my good neighbor Rood (superintendent of our big Sunday-school)



Wherefore God also hath highly exalted him, and given him a name which is above every name; that at the name of Jesus every knee should bow, of things in heaven, and things on earth, and things under the earth; and that every tongue should confess that Jesus Christ is Lord, to the glory of God the Father.—PHIL. 2:9, 11.

He brought me up also out of an horrible pit, out of the miry clay; and he set my feet upon a rock, and established my goings. And he hath put a new song in my mouth, even praise unto our God: Many shall see it, and fear, and shall trust in the Lord.—PSALM 40:2, 3.

interrupted me by saying, "Why not have Florida first and Ohio second?"

Of course I said "amen;" but I admonished Florida to hurry up if she didn't want to "get left." It has often been said of late, that, as Ohio goes so goes the whole United States: just now it might almost be said, as the United States

goes, so goes the "whole wide world." My friends, does it not just now begin to occur to you that this terrible war is on the way toward a "new heaven" and possibly "a new earth," in many respects?

Before leaving the subject of temperance, let me quote from one of the greatest dailies of our land. *The Toledo Blade* was, years ago, one of the first city dailies to come out squarely for prohibition, and it has ever since been pouring "hot shot" into the ranks of the enemy. Here is one of their latest:

"The greatest saving now when most needed would be made by stopping entirely the shipping of beer and also the returning of barrels, kegs, and cases of bottles, which take as much freight as the original shipment. The railroads formerly carried these returns free.

"You will see side tracks filled with cars loaded with coal while people are suffering for the want of coal, and factories shut down, throwing employes out of work because of the lack of coal, but you will see train loads of beer going by on schedule time.

"Even with the 25 per cent reduction in the amount of alcohol there will be wasted in manufacture of beer 54,000,000 bushels of grain a year, and the weight of water in the beer and the kegs and bottles multiplies this by eight, so you have on a transportation basis the weight of more than 432,000,000 bushels of grain used up for beer shipment alone, or 1,080,000 carload lots a year—enough to relieve the railroad congestion of the United States for all time."

No matter if the schools are closed, the factories shut down, and people contracting tuberculosis because of cold, beer must have the "right of way" before everything else! How long will Ohio stand this? How long will the world stand this? Perhaps it will have been stopped before you see this in print. God grant it may be so. Just now our physicians are reporting that the terrible (and almost incurable) disease syphi-

lis is contracted in the majority of cases by men who were (or *when* they were) *drunk*. Does it seem possible a man in his right senses would deliberately curse his wife—yes, even his *unborn children*, unless he were out of his head? But strong drink is not all of it. Great progress toward righteousness has been made in other ways in the past seventy years. When I was a boy there was no Y. M. C. A. (At least I had not heard of it.) There was no Endeavor society nor Salvation Army. I have seen them both start and grow. There were no young people's prayer meetings, no gospel songs. Why, before God sent out Moody and Sankey to us the popular songs were negro melodies, senseless or worse—some of them. Shall I give you two lines as a sample?

When I goes out to promenade, I looks so fine and gay,
I has to take de dogs along to keep de girls away.

When the Gospel hymns were started, they took like wildfire, for even the children saw and appreciated the difference. I told you in a Home paper a few months ago about the worldwide work of the Y. M. C. A. This same war has spread that and the Red Cross all over the world as nothing else could have done.

Now a word about our second text or texts. It was announced a week ahead that the topic of this especial prayer-meeting would be, "What has Jesus done for *you in your life*?" In answer I selected the two verses from the 40th Psalm. Perhaps I should explain that, during a brief part of my early life (thank God it was brief), I was attracted by (at that time) popular skeptics, agnostics, etc. After I left that crowd I one day had a talk with a young man of much ability who had been flattered because he spoke and even wrote some very plausible things against the Bible. I finally induced him to go "just once" to our prayer-meeting. After several fine testimonies from young converts I was a good deal worried when *he* arose to speak. He apologized, saying he was very likely out of place, as he was not prepared just then even to accept Christianity; but that there was one "testimony" he could honestly give, and that was that "skepticism and infidelity are the most unsatisfactory things the world has ever produced." I found it so, and it was at this time the dear Saviour found *me* and "brought me up out of a horrible pit, out of the miry clay," * set

*Some of you may be inclined to think I exaggerate about being in "a horrible pit" and "in the miry clay;" but Mrs. Root could, if she would, assure you there is no fiction about it, for *she* will remember it to the last day of her life.

my feet upon a rock and established my going." Yes, praise the Lord, "he put a new song in my mouth" in place of the old "doggerels." Shall we not all join, not only in *singing* but *helping* to bring about "the whole wide world for Jesus?"

BEE CULTURE AND SOME OF ITS KINDRED INDUSTRIES IN FLORIDA.

The following is clipped from the Florida Grower for Nov. 10, 1917.

My good friend, the editor of the *Florida Grower*, has asked me to write something about bee culture in Florida. Perhaps in beginning I might speak of the kindred industry of poultry-keeping. Years ago I overheard a young kid say to the proprietor of a general store something like this:

"Mr. T, if you did not have to pay any money for the goods you keep in your store, wouldn't storekeeping be just fun?"

The storekeeper grinned; I do not quite remember what answer he gave the urchin; but I have often thought of it since, especially since the "high cost of—chicken feed."

At my winter home in Bradentown I have of late done more with chickens than with bees, and I suppose there are a lot of people who just now are thinking it would be rare fun to keep a lot of chickens if it did not take so much "good money" to buy the feed. When I spent my winters on the island of Osprey there was one man on the island who kept something like a dozen chickens, and he never fed them anything—did nothing but just gather the eggs. The small number of chickens went over to the Gulf Beach after animal food, then rambled over the island for what else they needed to make up a "balanced ration." Year after year, winter and summer, he did nothing but gather the eggs; but, of course, he did not keep very many fowls. Where the number kept is just sufficient to supply a family with eggs, and they are fed from the scraps from the table, such people know very little about the expense of keeping laying hens by the hundreds or thousands. You may suggest that the poultryman may grow his own grain, even down in Florida; but this does not make it very much better, for I saw a statement in one of the poultry journals quite recently to the effect that the grain they had been feeding to their chickens would have brought more money on the market than the eggs and chickens that had been sold. In an interview with a poultryman of our Ohio Experiment Station he said I was entirely right, and that unless grain came down or eggs went up it would be almost an impossibility to get out whole, and the person who undertakes to keep poultry by the hundreds and hire help to care for them will be almost sure to sink money.

Now, if you choose, let us take up bee culture.

Bees, if prudently managed, almost fill the bill as presented by that youngster to the storekeeper. You do not have to buy grain, and you really do not have to buy feed of any sort. Of course, if a bad season should occur, and you have not kept reserve "slabs" of honey in the shape of capped and sealed frames of comb, you may have to buy sugar, and that, too, is away up. We have in Medina at present writing a large number of colonies, and more honey on the first day of September than they will in all probability need for the winter. Some of the younger members of our firm were talking about extracting honey and selling it, because the price of honey is also away up, and then buying sugar to feed if feeding should happen to be needed.

I said, "No, no, boys! Save what honey there is

right in the comb for any possible emergency, for there is no easier, quicker, and safer way of feeding bees that are short of stores than to give them sealed stores of honey."

I think the boys did not do any extracting.

Langstroth lays strong emphasis on such advice in his book published over fifty years ago. Combs of sealed honey are the "sheet-anchor" of successful beekeeping. They are like money in the bank, or even better. They can be given to a colony short of stores very easily. There is no robbing, and no unseasonable disturbance such as liquid feeding causes. Another thing, those new in beekeeping and who have not experimented as I have in years past, will find it difficult to say how many pounds of liquid feed, honey, or sugar syrup, must be fed to get the same number of pounds sealed up in the combs.

Our President and his cabinet have, as you probably all know, urged beekeeping just now in order that honey may take the place of sugar more largely. "Gather up the fragments that nothing be lost" seems to be the slogan as I write.

Well, now, there are tons and tons of honey going to waste all over Florida because of the lack of bees to gather it; and after you once get a start there is nothing to be bought in the shape of high-priced grain or any other feed. The day of patent hives has gone by. All you need to buy is cheap, simple hives and give the bees a home. Of course the amount of honey you get will depend a good deal on the season and the locality; but, my dear friend, it depends ever so much more on the man or woman who is the owner of the bees. In the height of my enthusiasm, when I was deep in the studies of the possibilities of bee culture, years ago, I secured a barrel of honey from a single colony of bees in just one summer, but to do it I bent every energy and left no stone unturned to have everything just right. Of course there was a tremendous flow of honey that lasted a long while, during that summer of 1868. One single colony, mind you, did this. When I reported in our county paper what I had done, an old man who had about a hundred colonies in box hives said it was an impossibility—that I deliberately falsified or else I had gone crazy. When I took the old gentleman by the arm, however, and led him to my apiary and showed him a colony of bees suspended on a spring scale with a dial like those you have seen in the meat market, he was obliged to own up and apologize. I made him sit down by the hive and watch the pointer of the scale, with watch in hand, to see how many pounds they would probably bring in in a day. If I remember correctly, over on the East Coast, Florida, before the great freeze of years ago, a good-sized apiary once averaged almost, if not quite, a barrel of honey to the hive. Now while we sing

"Praise God, from whom all blessings flow,"

shall we not bestir ourselves and be ready to take as a free gift this blessing in the shape of beautiful, pure, wholesome honey that takes only a little of our time and attention to secure, without any regard to the high cost of grain and ever so many other things? Can you imagine, my good friend, any shorter cut between "producer and consumer" than taking the honey from your own hives?

A. I. ROOT.

GOATS AND GOATS' MILK FROM FARAWAY NEW ZEALAND.

Dear Mr. Root:—I have been greatly interested in your articles about goats and their value. Ten years ago my wife was suffering with chest trouble when the doctor who was attending her strongly advised me to procure a milk goat and give my wife the milk because, as he said, it was the finest and best milk she could get, and there was

no chance of tubercular germs in the same. I took the advice and bought a goat for which I paid, as you would say, about 10 dollars. As is well known, any one suffering from tubercular troubles is very touchy about what he drinks or eats; but in the case of my wife she had nothing but praise for the taste and quality of the nanny milk. Since that time until the present I have never failed to sing the praise of goats' to all my friends and advise them to buy one if possible.

I have now a good milk goat, two young ones, a doe and a buck, and also a pure-bred Angora, which is a beauty. The nanny after bringing up two young kids until they were over three months old, now keeps me supplied with splendid milk. Of course, living by myself, a great deal of milk is not needed; but for all that I have plenty; and when my little girl comes each week-end from her aunt's to make a visit with me she dearly loves porridge for breakfast with goats' milk and honey—two of the finest things to be found anywhere.

A friend was visiting me the other evening just as I was milking my nanny. When I had finished I offered him a drink of milk; but he said that he did not want one; but as I would not take no for an answer he just took a sip at first, then a little more, which was followed by a real good drink, after which this remark was uttered: "By Jove! that is splendid. I never thought goats' milk was so nice."

Mr. Root, I always read your articles with pleasure, and not the least of them are the ones about our friends the goats. Keep it going, because the work is good.

S. RINALDI,

Kaipor, Canterbury, New Zealand.

POTATOES FROM SPROUTS—SOMETHING MORE ABOUT IT.

Our good friend Chalon Fowls, of Oberlin, Ohio, clipped the following from their local paper and sends it to us:

After being laughed at by a number of her neighbors last spring, an Oberlin lady raised a peck of fine potatoes from sprouts. During the spring her last potatoes were sprouted and she broke them off and threw them away. Later she thought she would plant them and put two sprouts in a hill, first puddling the soil. She had twenty hills; and, altho the neighbors used to lean over the fence and tell her she would have some choice green vines but no tubers below, she said nothing, but hoed her rows and chased the friendly potato-bug. No particle of potato was attached to the sprouts when planted. The harvest produced as fine mealy tubers as ever grew; and, altho not so large as many, they were well worth while. The lady says the value of the potatoes does not compare with the real joy she is having in telling her neighbors how to garden.

Today, Jan. 10, our garden is picking up finely under the influence of a warm summer shower. Three or four rows of beans, a little corn, and some egg plants are all that have entirely "gone dead." The Chayote is starting up again from the root, in fine shape.

SOME KIND WORDS FROM A HOME MISSIONARY.

I find a chance to pass your magazine on from time to time to others who are interested in bees, and hope to do good in more ways than one. May God continue to bless you in your work, which in the bee line is clean, honest, and upright; and I am sure your work for the Master has been abundantly blessed, for he never forgets.

Combs, Ark.

REV. J. E. JETER.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeier & Arpe Co., 139 Franklin St., New York.

Small lots of off-grade honey for baking purposes. C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

FOR SALE.—White Montana Honey in new sixty-pound cans. Twelve Dollars per can. Six pails, each ten pounds net per case, \$12.60. Six pails, each ten pounds gross, \$12.00 per case. Immediate shipment. B. F. Smith, Jr., Fromberg, Mont.

Last fall Mr. Smith asked us our advice on when best to sell his crop of 15,000 lbs. of clover extracted honey. We answered him by advising that he hold until May, unless he got a good round price for it before. He could at that time have taken something like 12c per pound for it. He held it. At our Michigan State convention last December, he again asked what we thought about the future price of honey. He could then get 17c per pound for it. We advised him to hold. He sold the entire crop the other day on board the cars for 18½c per pound. Mr. Smith's case is only one in hundreds of cases where producers have done well by following the advice of the Domestic Beekeeper. We want every beekeeper who has honey to sell to send in his dollar for the Domestic during 1918. We have the back numbers so can begin your subscription with the January number, thus making your volume complete. Do it today, and at the end of the year get your dollar back if you think you have not received it's worth.

HONEY AND WAX WANTED

HONEY WANTED.—Light extracted with sample and price. D. H. Welch, Racine, Wis.

WANTED.—Comb and extracted honey. J. E. Harris, Morristown, Tenn.

WANTED.—To buy a quantity of dark and amber honey for baking purposes. A. G. Woodman Co., Grand Rapids, Mich.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

BEEWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

Have you, Mr. Producer, been getting all for your honey that you could expect? If the price you have been getting has been less than the largest price you have read about, let the Domestic Beekeeper, Northstar, Michigan, help you dispose of your 1918 crop. Investigate.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

BASSWOOD AND EVERGREEN TREES.—Send for list. Hansen Nursery Co., Niles, Mich.

FOR SALE.—14 extracting supers, 10 frames, N. P. Price 85 cts. Alvin Buff, Frost, Ohio.

FOR SALE.—70 cages for pound bees. Cheap. Van Wyngarden Bros., Hebron, Ind.

FOR SALE.—Two-lb. bee cages and 8-oz. tumblers. Van Wyngarden Bros., Hebron, Ind.

FOR SALE.—\$1,200 for the best comb-honey outfit in Central Iowa. Box 42, Colo, Iowa. 663

Beekeepers, let us send you our catalog of hives, smokers, foundations, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

FOR SALE.—Root 6-inch foundation mill in perfect condition, \$20.00. Address C. H. Cyrenius, Oswego, N. Y.

PURE MAPLE SYRUP.—I expect to ship the same high grade syrup as in the past. Order early. C. C. Parkhurst, R. F. D. No. 26, Garretttsville, O.

NORTHWESTERN BEEKEEPERS.—Order Root's Supplies near home and save time and freight. Geo. F. Webster, Valley View Farm Apiary, Sioux Falls, S. Dakota.

"BEST QUALITY" comb foundation for L. or H. frames; 25-lb. lots, Med. brood, 55c; light brood, 60c. Pure natural beeswax, not "Weed Process." J. J. Angus, Grand Haven, Mich.

FOR SALE.—Hand printing press, full equipment, will print anything from calling cards to an auction bill, ample size for circulars of every description. Write for particulars and prices. A. J. Wright, Bradford, N. Y.

WAR PASTE FOR LABELS COSTING LESS THAN A PENNY A PINT.—Send 25 cts. for formula for paste for labels that will stick anywhere. Money refunded if not satisfactory. Sunnyside Apiaries, Fromberg, Mont.

FOR SALE.—75 comb honey supers complete. Nailed and painted, good as new, for 1¼x1¼x1¼ bee-way sec. Price 40 cts. each. Will sell all or part. Never had disease. Noah Bordner, Holgate, O.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—2,000 4¼x4¼x1¼ Bee-way sections; 100 regular shipping cases for same, with glass, etc. Root Co. make. Never been uncanted. Make best offer. 300 regular 8-frame size. Shipping screens used once. F. W. Morgan, DeLand, Ills.

FOR SALE.—One thousand bee hives with supers. Three-fourths dovetailed. Balance halved together at corners and nailed both ways. Hoffman frames thruout. We will guarantee them to be sound and free from disease. Will sell all or any part at about one-half what new hives will cost. Apply to The Hyde Bee Co., Floresville, Tex.

WANTS AND EXCHANGES

WANTED.—50 to 200 colonies bees, preferably near home. H. G. Quirin, Bellevue, O.

WANTED.—To buy or run on shares, an apiary. F. Deiter, Havlock, Nebraska.

WANTED.—1 to 200 colonies of bees. Geo. Peters, Callicoon, N. Y.

WANTED.—Extracting outfit in A1 condition. Mrs. J. H. Sitzler, Ft. Collins, Colo.

WANTED.—10 to 100 swarms of bees, not over 50 miles from Bellevue. N. B. Querin, Rt. No. 7, Bellevue, O.

WANTED.—A two-frame extractor, condition good, price reasonable. Address John Sills, Clinton, Wash.

WANTED.—Honey and beeswax. Send sample and price.

C. S. Fayer, 386 Halsey St., Portland, Ore.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.

Superior Honey Co., Ogden, Utah.

WANTED.—25 to 50 colonies of bees, within 150 miles, and second-hand, six-frame, extractor.

O. A. Dugstad, Spring Valley, Minn.

BEES WANTED.—From 1 to 200 colonies, within 200 miles. Also second-hand apiary equipment.

John E. Geiger, Syracuse, Kansas.

WANTED.—Power extractor, brood-foundation machine, 10-fr. queen-excluders and 5-gal. cans. What have you? E. B. Mullins, Baconton, Ga.

WANTED.—To trade for bees, a 1912 Regal auto. Good tires, would make fine truck.

C. B. Landwer, Delphos, O.

WANTED.—Expert beekeeper desires to run bees on shares. Address

592 J., care of Gleanings, Medina, O.

WANTED.—50 colonies of bees in 10-frame hives, delivery about May 1st. Must be free from disease. Geo. Herrick, 12110 Parnell Ave., West Pullman, Ills.

WANTED.—Colonies of bees in Eastern New York. Give style of hives and price asked.

G. O'Connell, 467 42nd St., Brooklyn, N. Y.

WANTED.—Second-hand Cowan or Root extractor. Must be cheap and in good condition.

T. J. McDonald, Blue Ridge, Georgia.

WANTED.—Colonies of bees in Eastern Virginia, Maryland or Delaware. Give description and price.

I. J. Stringham, 105 Park Place, N. Y.

WANTED.—300 colonies or less of bees—for cash and spring delivery—correspondence with full particulars solicited.

A. W. Smith, Birmingham, Mich.

WANTED.—To rent, 60 acre grain and hay farm to man with some experience with bees. Good bee location and opportunity to right man.

W. A. Latshaw, Carlisle, Indiana.

WANTED.—Ten or twenty acres to work on shares, in beans. Would help with or take charge of apiary. Experienced. Address

S. J. Wilcox, 121 John R. St., Detroit, Mich.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered.

The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

WANTED.—To trade Edison motion-picture machine, equipped complete, for bees by lb. colony or nuclei, Or can use typewriter, graphophone or piano. What have you to trade? Write

Eddie Holt, Westby, Wis., Rt. 3, Box 95.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you.

Dadant & Sons, Hamilton, Illinois.

Would you like to receive four or five dollars per hundred more for your 1918 crop of honey than the big buyers will offer you? The Domestic Beekeeper, which will cost you but \$1 per year, will show you how. This is no guesswork, we have done this very thing with hundreds of our subscribers on their 1917 crop, and are willing to do the same by others. You will make your greatest 1918 mistake if you do not, every one of you, investigate the work the Domestic Beekeeper is doing for its subscribers, along the line of buying and selling for them.

AUTOMOBILE REPAIRS

AUTOMOBILE owners should subscribe for the **AUTOMOBILE DEALER AND REPAIRER**; 150-page illustrated monthly devoted exclusively to the care and repair of the car. The only magazine in the world devoted to the practical side of motoring. The "Trouble Department" contains five pages of numbered questions each month from car owners and repairmen which are answered by experts on gasoline-engine repairs. \$1 per year. 15 cents per copy. Canadian subscriptions \$1.50. Postals not answered. Charles D. Sherman, 107 Highland Court, Hartford, Conn.

POULTRY

White and Buff Wyandottes, White Rocks and dark Cornish. Selected pens mated with cocks and cockerels of exquisite shape and color. Mating list ready. Write. Joseph Cox, Valencia, Pa.

FOR SALE.—Single comb Rhode Island Red hatching eggs, \$1 and \$2 per 15. My birds are bred from Chicago winners. C. R. Zimmerman, 115 W. Garfield Ave., Swanton, Ohio.

REAL ESTATE

In healthy Oregon; 20 acre alfalfa ranch; 100 colonies bees; good house; \$2,500.00. 871 Box 422, Hermiston, Ore.

FOR SALE.—Village home with plenty of fruit, fully equipped apiary. Write if interested. Clover Valley Apiary. N. H. Wilson, Derby, Vt.

FOR SALE.—Fourteen acres—Bee, fruit, poultry farm on interurban near Ypsilanti and Ann Arbor. Particulars for return postage.

Edwin Ewell, Ypsilanti, Mich.

VIRGINIA, N. C., W. VA., and Ohio farms at \$15.00 per acre and up offer big values for the price. Best climate, markets, schools and transportation. Good land and neighbors. Write F. H. LaBaume, Agrl. Agt., N. & W. Ry., 246 Arcade, Roanoke, Va.

FINE CHANCE IN COLORADO! My home and apiary on Lincoln Highway, in Platte River Valley, 35 miles north of Denver, edge of village of 500, five-room cottage, 3 lots, soft water, 50 colonies bees, lots of supers and supplies. Good market right at home. \$1,500 takes all, part time. Will stand closest investigation.

N. L. Henthorne, Platteville, Colo.

A small California farm earns more money with less work. Raise the crops you know about—alfalfa, wheat, barley, etc.—also oranges, grapes, olives, and figs. Ideal for dairying, pigs, and chickens. No cold weather; rich soil; low prices; easy terms; good roads, schools and churches. Enjoy life here. New comers welcome. Write for our San Joaquin Valley, also Dairying and Poultry Raising illustrated folders free. C. L. Seagraves, Ind. Com. A. T. & S. F. Ry., 1927 Railway Exchange, Chicago.

Do you want a farm where largest profits are made? The South's great variety of crops and wonderfully productive climate makes it the most profitable farm section of America. It is the place for the lowest-cost meat production and dairy farming. It grows the largest variety of forage crops. Good lands, in good locations, as low as \$15 to \$25 an acre. Let us show you locations that will give the highest profits. M. V. Richards, Commissioner, Room 27, Southern Railway System, Washington, D. C.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 DeWolf St., Vincennes, Ind.

When it's **GOLDEN** it's **PHELPS'S**. Try one and you will be convinced. C. W. Phelps & Son.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Courtland St., New York.

FOR SALE.—Cheap, 5 colonies of Italian bees, 5 empty hives. T. H. Hansen, Rt. 6, Janesville, Wis.

FOR SALE.—Bees, queens, and honey in their season. H. G. Quirin, Bellevue, Or.

Italian queens, and bees by the pound, for sale early. H. E. Graham, Gause, Texas.

FOR SALE.—1918 Golden Italian queens; price list free. Write E. E. Lawrence, Doniphan, Mo.

When it's **GOLDEN** it's **PHELPS'S**. Try one and be convinced. C. W. Phelps & Son, Binghamton, N. Y.

Hardy northern-bred 3-banded Italian queens. June 1, untested, \$1.00 each; \$9.00 per doz. A. E. Crandall & Son, Berlin, Conn.

FOR SALE.—Mott's Strain of Italian queens. Plans, "How to Introduce Queens and Increase." 25 cts. E. E. Mott, Glenwood, Mich.

"**SHE SUIT ME**" Italian queens; \$1.00 from May 15th to Oct. 15th. Allen Latham, Norwichtown, Conn.

Vigorous prolific Italian queens, \$1; 6, \$5; June 1. My circular gives best methods of introducing. A. V. Small, 2302 Agency Road, St. Joseph, Mo.

Try **ALEXANDER'S** Italian queens for results. Untested, each, 75 cts.; 6 for \$4.25; \$8.25 per dozen. Bees by the pound. C. F. Alexander, Campbell, Cal.

Italian queens, **THE HONEY GATHERERS**. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

QUEENS and bees by the pound: Golden Italians, Imported Blue Ribbon strain—the kind that gets results, ready May 10th. Write for prices. J. W. Rice, Fort Smith, Ark.

FOR SALE.—First class Italian queens and bees in season. Send for price list. Bees free from disease, safe arrival and satisfaction guaranteed. M. Bates, Greenville, Ala., R. 4.

BREEDING QUEENS.—I have a few extra choice Italian breeders for spring delivery. Price \$5.00 each. J. E. Wing, 155 Schiele Ave., San Jose, Cal.

One or two hundred colonies of bees on wired frames. Free from disease, to ship north May 1st. Could use nuclei in the Southern States. W. L. Coggeshall, Bradentown, Fla.

FOR SALE.—Golden Italian queens that produce golden bees for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1; 6 for \$5. Wm. S. Barnett, Barnetts, Va.

Bright Italian queens, ready April 15th, \$1.00 each. Safe arrival guaranteed. Write for prices of larger quantities. W. W. Talley, Greenville, Ala., Rt. 4.

BUSINESS-FIRST QUEENS.—Three banded and goldens and Belgian hares. Tested queens \$2.00 by return mail. Send for price list. M. F. Perry, Bradentown, Fa.

Golden Italian queens bred strictly to produce Golden Bees of the best honey-gathering strain. Untested, each \$1.00; 6, \$4.25; 12, \$8.25; 100, \$60.00. Satisfaction guaranteed. L. J. Pfeiffer, Route A, Los Gatos, Cal.

FOR SALE.—I still have for sale some of the high grade Italian bees I advertised in the February issue of Gleanings a year ago. They are in good eight-frame hives. Price with one super, \$5.00. Still too many bees in town, reason for selling. G. F. Schilling, State Center, Iowa.

FOR SALE.—Not being able to properly care for all my bees, will sell 100 colonies. Free from all disease. Wintering fine in cellar.

D. W. Trescott, Conesus, N. Y.

We have several hundred pounds of bees and 3-banded Italian queens for sale, April 1st delivery; safe arrival guaranteed. Write for prices. J. A. Jones & Son, Hope Hull, Montgomery Co., Ala.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey gatherers as can be found; each \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00. J. B. Brockwell, Barnetts, Va.

FOR SALE.—Three-band Italian queens from best honey-gathering strain obtainable. Untested queens, \$1.00 each; 6, \$5.00; 12, \$9.00. Safe arrival and satisfaction guaranteed. W. T. Perdue, Ft. Deposit, Ala.

ITALIAN QUEENS.—The best I have ever had; untested each \$1; five, \$4.50; ten, \$8; twenty, \$15; fifty, \$35; 100 for \$60. Delivery beginning in June. Orders filled on time and safe arrival guaranteed. Yours for more honey, J. B. Hollopeter, Queen Breeder, Rockton, Pa.

FOR SALE.—Golden Italian queens. Untested queens, \$1.00 each; six, \$4.25; per dozen, \$8.25; 50, \$32.50; \$60.00 per 100. Tested queens, \$1.50; 1 frame nucleus, no queen, \$1.25; 2 frame, \$2.25; 3 frame, \$3.00; breeders, \$5.00 and \$10.00. L. J. Dunn, 54 Broadway Ave., San Jose, Cal.

Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolans. Tested, \$1.00 each; untested, 75 cts. each. Bees per lb., \$1.50; nuclei, per frame, \$1.50. Send your order for bees early. C. B. Bankston & Co., Buffalo, Leon Co., Tex.

GOLDENS THAT ARE TRUE TO NAME.—Queen nucleus and bees by the pound. We receive hundreds of testimonials annually, write for list. Untested queens each, \$1.00; 6, \$4.25; 12, \$8.25, write for prices in lots. We are now booking orders for early delivery. Garden City Apiaries, San Jose, Calif.

THREE BANDED ITALIANS ONLY; queens, packages and nucleus, untested queens each, \$1.00; 6, \$4.25; 12, \$8.25. Write for prices in larger lots, also nucleus and pkgs. Booking orders now. If you consider quality, pure mating and low price, I am your queen-breeder. H. G. Dunn, The Willows, San Jose, Calif.

I can spare several hundred pounds Italian tees with fine young Italian queens, in one or two pound packages, delivery in June and orders booked now, no deposit required. Safe arrival guaranteed. Price: One 1-lb. pkg. and queen, \$3.00; ten or more, \$2.80 each. One 2-lb. pkg. and queen, \$4.50; ten or more, \$4.20. J. B. Hollopeter, Rockton, Pa.

FOR SALE.—April the 15th is the date on which we can ship you the best three-banded bees and queens on the market; we have been in the bee business continually for twenty-four years and have been striving to secure the best three-banded bees which money could buy and skill produce, all these years. Judging from the many letters we have received from satisfied customers, we have succeeded in our efforts. We believe we can furnish you with the best honey-gatherers to be found anywhere. You will find our nuclei better filled with bees and brood than any other nuclei you can buy. All our bees are on standard, wired, Hoffman frames; full sheets of foundation. File your orders now, sending money when you want the bees shipped. Satisfaction and safe arrival guaranteed. We quote you without queen, as follows: Three-frame nuclei, \$2.50; two-frame nuclei, \$2.00; one-frame nuclei, \$1.50; three pounds bees, \$3.50; two pounds bees, \$2.50; one pound bees, \$1.75. If queen is wanted with bees add price of queen wanted. Young, untested queens, 75 cts.; young, tested queens, \$1.00. The Hyde Bee Company, Floresville, Texas.

FOR SALE.—Golden Italian queens which produce gentle yellow bees, the hardest workers we have known. Untested \$1.00; tested \$1.50. Wildflower Apiaries, So. Trust Bldg., Little Rock, Ark.

FOR SALE.—Italian bees in 8 and 10 fr. hives, Hoffman and Danz. frames wired, full sheets of foundation; also 1, 2 and 3 fr. nuclei. Henry Shaffer, 2860 Harrison Ave., Cincinnati, O.

QUEENS.—We are breeding from the best Italian stock. Untested, \$1.00; select untested, \$1.50; tested, \$2.00. We have been breeding queens for more than 20 years. We guarantee safe arrival. E. A. Simmons, Greenville, Ala.

Are you keeping well posted on the crop condition and price prospects for your 1918 crop of honey? If not, you should! The Domestic Beekeeper, Northstar, Michigan, will keep you posted on crop condition and price prospects as recommended by the Committee of the Chicago North-western association. This committee, thru the Domestic Beekeeper, saved producers a half million dollars on their 1917 crop of honey and expect to do even better on their 1918 crop. Are you one who are not taking advantage of an opportunity never before offered to secure all your crop of honey is worth? This opportunity is worth investigating.

HELP WANTED

WANTED.—A man to work with bees for the season of 1918—one who has had some experience. Alex Adams, Greeley, Colo., Rt. No. 2.

HELP WANTED.—Experienced beeman to help care for six hundred colonies bees, extracted honey. Will pay good man \$100.00 month. Idaho Honey Producers Ass'n, Idaho Falls, Idaho.

WANTED.—Single man, 47, will buy, lease or work bees on shares or salary. Experienced in queen rearing and all branches of apiculture. Address Audubon Johnson, 1925 Monroe St. Toledo, O.

WANTED.—Man to work with bees the coming season. Address, stating age, experience and wages, we to furnish board. The Rocky Mountain Bee Co., Billings, Montana, Box. 1319.

WANTED.—Young man to assist in caring for 600 colonies run for extracted honey; must have some experience; board and room furnished. State age and wages. B. B. Cogshall, Groton, N. Y., Rt. 12.

WANTED.—For the honey season of 1918, two students of good clean habits, willing and able to work. Board given, and more if conditions are favorable. R. F. Holtermann, Brantford, Ontario, Canada.

WANTED.—A man who understands manufacturing of beekeepers' supplies, managing plant for doing that work; would prefer a man with a small capital to invest. The M. C. Silsbee Company, Avoca, N. Y.

HELP WANTED.—Will give experience and fair wage to active young man who is not afraid of work, for help in large well-equipped apiaries for season starting in April. State present occupation, also age, weight, and why exempted. Morley Pettit, The Pettit Apiaries, Georgetown, Ontario, Canada.

WANTED.—Single or married man above draft age to work with bees and general farming. Also man below draft age to work in bees during July and August. State wages expected and experience in first letter. Roscoe F. Wixson, Dundee, N. Y., Rt. No. 4.

WANTED.—Industrious young man, fast worker, as a student helper in our large bee business for 1918 season. Truck used for out-yards and hauling. Apiaries located near summer resorts. Will give results of long experience and board and small wages. Give age, weight, experience, and wages in first letter. W. A. Latshaw Co., Clarion, Mich.

WANTED.—A man of some experience in the handling of bees. Prefer him to be under or over military age and morally of good habits. A chance to learn queen-breeding, the package business and honey production with fair wages and board. M. C. Berry & Co., Hayneville, Ala.

WANTED.—Young men of energy and character, of clean habits, not eligible for military duty, as helpers in our extensive bee-business. Fine chance to learn. Write immediately, giving wages, age, height, weight, experience, and references all in first letter, or expect no answer. E. F. Atwater, Meridian, Idaho.

SITUATION WANTED

WANTED.—Opportunity to learn queen-rearing. Good habits and character. References. Ward I. Reed, Lowell, Arkansas.

WANTED.—Position as student helper in large bee business. Have had some experience. Can give best of references as to my character and reputation. Henry Eggers, Eau Claire, Wis., R. F. D. 1.

WANTED.—Young lady, refined, educated, good worker, desires season on commercial apiary in Southern States. Some knowledge of poultry and green house work. 954 R. A. F., care of Fifth Ave. Bank, New York City.

SWARMING CONTROLLED . . .

No additional fixtures needed; unnecessary to clip queens; done solely by manipulation. Successfully used for eight years. For particulars address

Trimble & Thompson, Marion, Iowa.



Vaughan's Hazel Size for Early Green or Large Winter Onions. White, Red or Yellow. Pint. 30c quart. 50c; prepaid.

Vaughan's Bulk Seeds of new crop are now ready. You can't order too early this year, many are scarce and will soon be gone.

Vaughan's Seed Book for 1918 tells the whole story. Mailed FREE, East and West. Largest growers of

Onions, Cabbage, and Radish have used Vaughan's Seeds for more than forty years. Write for a copy today.

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Twice the Power at Half the Cost

Sizes 2 to 22 H.P.—Select Your Own Terms—Direct-from-Factory prices. Write your own order—Save \$15 to \$200. Prompt Shipment. Big new catalog, "How to Judge Engines" FREE—by return mail. Postpaid.

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STANDS HOT AND COLD WATER

450,000 TREES

200 varieties. Also Grapes, Small Fruits, etc. Best rooted stock. Genuine, cheap. 3 sample blackberries mailed for 10c. Catalog free. LEWIS ROESCH, Box H Fredonia, N.Y.

QUEENS THAT WILL PLEASE

OVER 20 YEARS OF CAREFUL SELECTING AND BREEDING

GUARANTEE.

You take no risk in buying my queens, for I guarantee every queen to reach you in first class condition, to be purely mated, and to give perfect satisfaction.

They are bred from IMPORTED stock. The very best for honey gathering and gentleness. They are not given to swarming and are highly resistant to diseases. Give me your order and if after you have given my queens a fair trial, you are not satisfied in every way that they are as good as you have ever used, just return them and I will send you queens to take their places or return your money with any postage you have paid out on returning the queens.

PRICES APRIL 1 TO JUNE 15th.

	1	6	12
Untested.....	\$1.00	\$ 5.00	\$ 9.00
Select Untested.....	1.15	6.00	10.00
Tested.....	1.50	8.00	17.00
Select Tested.....	2.00	11.00	20.00

L. L. FOREHAND - - FORT DEPOSIT, ALABAMA

Queens Bees by the Pound Queens

Three-banded and Golden Italians. The best of either. They are hustlers—gentle to handle, cap their honey white, are very resistant to European foul brood. We have added B. M. Caraway's queen-rearing outfit to ours; also have with us one of his assistants, so we hope to fill all orders promptly. We had fine success last season shipping bees by the pound in our newly devised shipping-cage, a number of shipments going as far as Idaho and Wyoming. Mr. R. B. Millis, Corinth, N. Y., wrote, "Bees arrived in fine shape; not 50 dead bees to the cage." 2-lb. size. Satisfaction and safe arrival guaranteed. Reference: The Guaranty State Bank, Robstown, Texas, or The City Nat. Bank, Corpus Christi, Texas.

	1	6	12	50	100
Untested Queens	\$1.15	\$ 6.35	\$11.50	\$ 43.70	\$ 85.00
Select Tested	2.50	11.50	20.70	74.75	138.00
Bees, 1-lb. package.....	1.75	9.80	18.40	74.75	138.00
Bees, 2-lb. package.....	2.90	17.25	33.95	132.25	240.00

When ordering pound packages add price of queen wanted.
Get our prices on empty bee-cages. Circular Free.

NUECES VALLEY APIARIES, Calallen, Texas, hereafter will be known as
Nueces County Apiaries, Calallen, Texas

E. B. AULT, Proprietor

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Farm, Garden and Orchard Tools

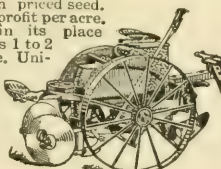
Answer the farmers' big questions. How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The

IRON AGE Potato Planter

solves the labor problem and makes the best use of high priced seed. Means \$5 to \$50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

No Misses
No Doubles

Bateman M'f'g Co., Box 20B, Grenloch, N. J.



Does a Clean Job— Saves a Lot of Work

That's the story of "SCALECIDE," the premier dormant spray. It will absolutely clean up San Jose scale—will also control apple canker, collar rot, bud moth, case bearer, aphids, pear psylla, etc. No other spray will do all this. "SCALECIDE" can be put on in one-half the usual time—a great saving in labor and you get through on time. Pleasant to handle. Sold on Money Back Basis.

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B. G. PRATT CO.,
M'f'g Chemists
50 Church Street
Dept. 6 New York



"SOMEWHERE IN THE U. S."

There are thousands of beekeepers who have not ordered their supplies for this season. The U. S. Government asks an increased production of honey to relieve the sugar shortage.

The Kretchmer factory has been working steadily all winter filling its own warehouses and rented storage space. A number of our workmen have been with us for years—they know how to make the kind of supplies you want for your bees.

As a result of careful tests extending over a long period of years, actual tests under all climatic and weather conditions, we make our Hive Bottoms of Southern Cypress, the decay-resisting wood, the Bodies or Brood Chambers and Supers of Northern White Pine, (it holds paint, finishes well, and does not check and split) and the Lock Cap Covers of California Redwood.

If you haven't received a copy of our new spring catalog, a regular Beekeepers' Department Store, send for it at once.

By all means get your order in without one bit of unnecessary delay. You don't want to lose any high priced honey this year on account of getting your supplies too late. If you'll mail us the order Now, we'll do the rest.

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301 ELEVENTH AVENUE COUNCIL BLUFFS, IOWA

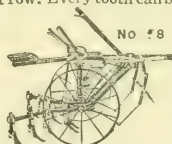
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Farm, Garden and Orchard Tools

Answer the farmer's big questions: How can I grow more crops with least expense? How can I cultivate more acres and have cleaner fields?

IRON AGE Riding Cultivator

will help you do this. Has pivot wheels and gangs with parallel motion. Adjustable to any width of row. Every tooth can be raised, lowered or turned to right or left. Lever



No. 8

adjusts balance of frame to weight of driver. Light, strong and compact—the latest and best of riding cultivators. We make a complete line of potato machinery, garden tools, etc. Write us today for free booklet.

Bateman Mfg Co., Box 20D, Grenloch, N.J.

"Best" Hand Lantern



A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. **THE BEST LIGHT CO.**

306 E. 5th St., Canton, O.

850,000 GRAPE-VINES

69 varieties. Also Small Fruits, Trees, etc. Best rooted stock. Genuine, cheap. 2 sample vines mailed for 10c. Descriptive catalog free. **LEWIS ROESCH**, Box H, Fredonia, N. Y.

Delivered to you FREE



Your choice of 44 styles, colors and sizes in the famous line of "RANGER" bicycles, shown in full color in the big new Free Catalog. We pay all the freight charges from Chicago to your town.

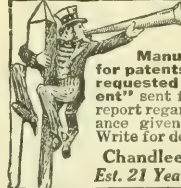
30 Days Free Trial allowed on the bicycle you select, actual riding test in your own town for a full month. Do not buy until you get our great new trial offer and low Factory-Direct-To-Rider terms and prices.

TIRES LAMPS, HORNS, pedals, single wheels and repair parts for all makes of bicycles at half usual prices. No one else can offer such values and such terms.

SEND NO MONEY but write today for the big new Catalog. It's free. **MEAD CYCLE COMPANY** Dept. E153, Chicago

Rider Agents Wanted

Inventions Wanted!



Manufacturers constantly writing us for patents. List of inventions actually requested and book "How to Obtain a Patent" sent free. Send rough sketch for free report regarding patentability. Special assistance given our clients in selling patents. Write for details of interest to every inventor.

Chandlee & Chandlee, Patent Attorneys
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Best for windbreaks and hedges. Protect crops and stock. Keep house and barn warmer—save fuel—save feed. Hill's evergreens are hardy, nursery-grown. Get Hill's free illustrated evergreen book and list of 50 Great Bargain Offers—from \$4.50 up per thousand. 50 years' experience. World's largest growers. Write **D. HILL NURSERY CO.** Evergreen Box 2462, Dundee, Ills. Specialists.



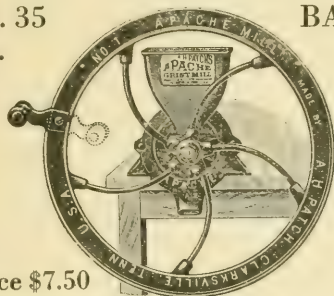
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Why not live better and save money, too?
Grind your wheat into Best Whole Wheat or Graham Flour. Your doctor knows how healthy these are. Make the BEST Corn Meal, the old-fashioned sort you can't buy at any price nowadays.

Do all sorts of fine and coarse grinding with an

APACHE MILL

Wt. 35
lbs.



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Price \$7.50

This Mill Makes Best Corn Meal, Graham Flour, Rye Flour, Chops, Hominy, Cracks Peas, Grinds Coffee, Spices, etc. Perfect adjustment for coarse or fine work. Will send Mill prepaid by Express **\$7.50**
APACHE CRIST MILL—Largest capacity, fastest grinding, easiest turning handmill. Does more, lasts longer.

A. H. Patch, Inc., Clarksville, Tenn.
The Blackhawk Corn Sheller Inventor
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Prompt service and no trucking bills.

THE A. I. ROOT CO., Mechanic Falls, Maine.
J. B. MASON, Manager.

Our Food Page—Continued from page 156.

At noon pour the boiling potato water over the rolled oats and salt and add the honey. When lukewarm add the yeast and beat well. Add a little flour if necessary to make a batter as stiff as cake batter. Cover and keep in a temperature of about 70 degrees until evening. At night stir in enough flour, half whole wheat and half white, to make a rather stiff dough. Knead well and cover closely. If the room is liable to become cold thru the night it is well to cover the bread raiser with a blanket. In the morning divide into two loaves and let rise again. When light brush with melted fat and bake.

RYE BREAD.

- | | |
|-------------------------------|-----------------------|
| 2 tablespoons flour | ½ cake dry yeast soak |
| 2 teaspoons salt | ed in |
| 1 tablespoon honey | ½ cup warm water |
| 2 ½ cups boiling potato water | 3 cups white flour |
| 2 potatoes mashed | Rye flour |

At noon pour the boiling potato water over the two tablespoons flour, the honey and the salt. Add the mashed potatoes and when lukewarm the yeast. Stir in enough white flour to make a batter, about three cups, and then proceed as in the recipe for oatmeal bread, using rye flour to make the dough at night.

In either of the above recipes, if preferred, the sponge may be made at night and the bread made into a dough in the morning.

WHOLE WHEAT MUFFINS.

- | | |
|----------------------------|--------------------------------|
| 1 egg | 1 teaspoon baking powder |
| 2 cups sour milk | |
| 1 cup white flour | 1 tablespoon melted shortening |
| 1 ¼ cups whole wheat flour | ½ teaspoon salt |
| 1 teaspoon soda | |

Beat the egg well, add the sour milk and then the flour in which the dry ingredients have been sifted. Add the melted shortening and bake in muffin pans about thirty minutes. —Continued on next page.

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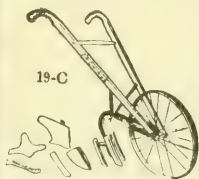
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Our Food Page—Continued from page 185.

CEREAL MUFFINS.

- | | |
|---------------------------|-------------------------|
| 1 cup white flour | 1 cup cooked oatmeal |
| ½ cup whole wheat flour | 1 egg |
| ½ cup milk | |
| 4 teaspoons baking powder | 1 tablespoon shortening |
| ½ teaspoon salt | |

Add the beaten egg and the melted fat to the cooked oatmeal. Beat thoroly and add the milk. Then add the dry ingredients in which have been sifted the baking powder and salt and again beat well. Bake in oiled muffin pans about thirty minutes. As the amount of moisture in the oatmeal may vary you may need more or less flour.

CONSERVATION CRACKERS TO ACCOMPANY SOUP OR SALAD.

- | | |
|--------------------------|--------------------|
| ½ cup cornmeal | 1 teaspoon salt |
| ½ cup wheat flour | 3 tablespoons milk |
| 2 tablespoons shortening | Grated cheese |

Sift flour, meal and salt and cut the fat in with two knives. Add enough milk to make a dough, roll out very thin, cut out and bake in a quick oven until golden brown. Sprinkle a little grated cheese over the top and put back into the oven until the cheese melts.

BAKED HONEY CUSTARD.

- | | |
|---------------------|----------------------|
| 1/3 cup honey | ½ teaspoon nutmeg or |
| 3 eggs | cinnamon |
| 2 cups scalded milk | ¾ teaspoon salt |

Beat the eggs slightly, add the honey and then the spice and salt. Pour the hot milk over slowly, stirring constantly. Bake in cups in a pan of water.

HONEY PICKLE FOR HAM.

(Rural New Yorker.)

- | | |
|----------------------|-----------------|
| 4 pounds coarse salt | 2 pounds honey |
| 1 ounce saltpetre | 2 gallons water |

Let the brine stand for 24 hours, then immerse the meat in it and let it stay in pickle six weeks. This is said to be a favorite recipe in France.

All measurements level.

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AROUND THE OFFICE M.-A.-O.

I don't associate much more at all any more with A. I. Root, so I don't. I ain't sayin' he ain't a good man either. Just so, he don't seem to be hangin' around hankerin' after my company much, and I hain't calulated any of the time to let him into this department, neither. But if he's goin' to tell fish stories in Gleanin's, he's got to be recognized in this department, I suppose, whether I like it or not. Then again, I associate with about anybody when it comes to fish and fishin' and fish stories and I don't see but that the fish story "Uncle Amos" has sent ain't pretty near up to standard. It's as big a one as my fishin' friend, Ab. Lutz, has ever told, and he's been practicin' 50 years or more with some of the best of 'em. Ab. and none of his fishin' friends, so far as I am knowin' to it, ever alleged goin' fishin' with a rake and wheelbarrow, or meetin' all the inhabitants of their town to oncet, sufferin' and swoonin', collective and severally, under the weight of fish so big they couldn't find room for them onto their backs. So, I guess Ab and me and the rest of our fishin' crowd ain't so superior to A. I. Root that we need feel he is lowerin' the tone of this department if we let him into it long enough to tell a fish story. So here is just verbatim what he sent home, expectin' evidently it would get past M.-A.-O. into his own high-toned department:

A few days ago when I arrived in the suburbs of Bradentown, I passed two girls (nearly full grown women) carrying a pole, a girl at each end. On the pole fish were strung, with the tails dragging on the ground. Said fish were so heavy the girls stopped every few rods to rest. Another girl about as large had a single fish tied over her back, the head coming up near her head, while the tail to this fish also came near (if it did not quite touch) the ground as she walked. A little farther I saw a wheelbarrow full of fish, some of them with their heads over the front end, while their tails dragged on the ground. The explanation of the above is that the frosts and freezes that played such havoc with our gardens made the fish stupid so they floated on top of the salt water, where they could easily be "raked" in. After I got home, I started "Wesley" with the garden rake and a pail down to the canal at the lower end of our garden. He soon returned with quite a lot about as big as your hand. It was a case of "the early bird" again. Somebody had gone ahead of him and got all the big ones. Were they good? I started to say at dinner time, "they are the best fish I ever ate," but Mrs. Root inter-

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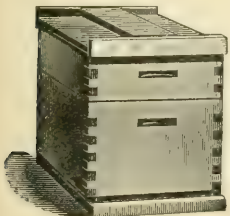
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Around the Office—Continued

rupted me by saying I had used that expression so often it had lost its effect."

There ain't much to add to a fish story of that size, only it seems to me dear old Mrs. A. I. Root is apparently on to "Uncle Amos" bigger'n a elephant when he gets to talkin' about fish in any way.

Now, while I have just had to let A. I. Root into this department for oncet on account of his poachin' on my fishin' preserves in Gleanin's, I want to clean up with him and get shut of the subject. It ain't that I want to pick on him either. I don't pick onto the Roots any more than just so as I can look freedom, free speech and the American flag in the face without blushin'. The Roots are ambushed along my breadline, and I ain't much for gettin' disconnected with fairly regglar and dependable food supplies. Old man Solomon was onto the racket when he got off that one about "the curse of a poor feller is his poorness." He had probably just seen some one like me, hired out, and not any braver than he figgered he dared to be, but wantin' to be more so the durndest. Let's see, tho, I was talkin' about somethin' else. It was about gettin' thru with A. I. Root in this M.-A.-O. dept. oncet and for all. There is one thing he's got to stop doin'. Anyway, R. F. Holtermann of Canady says he's got to. That's inducin' beekeepers to stray off into the goat-keepin' business. Holtermann was around the office here the other day, and I heard him tellin' how it had raised the very deuce and all with one of his beekeepin' neighbors. He said this neighbor was a desciple of A. I. Root, and got to readin' that goat stuff in Gleanin's, and went and bought two goats. Well, this prospective goat millionaire, who was a superintendent of some big concern and generally away from home at work all day, went away to work one mornin' last fall leavin' his two Williams staked out near his apiary of which he was awful proud too. They were both chained to a ring in the top

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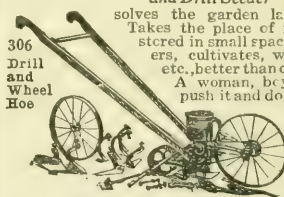
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Around the Office—Continued

of one stake that was driven into the ground. They weren't supposed to move that stake any. They were feedin' out around from the stake, as goats do—nibble and pull, nibble and pull—till they got to the ends of their chains and all the grass there was eat up. But they kept on pullin' after they had got thru nibblin'—till the stake pulled out of the ground. Then they fed along peaceful, chained together you see, of course. Of course, too, they fed right towards the bees. The devil never misses no such chance as to get a goat pointed wrong. No, siree, he don't. Of course, again, those two goats fed up straddle the first hive they come to, one on each side of it, and the chain twist 'em draggin' up to the side of that hive. Well, as them two goats fed on past the hive and the chain tightened up agin the hive and the goats kept goin' ahead, it didn't take no civil engineer to see that that hive was either goin' to stand up or tip over. Well, it tipped over. Holtermann says the way them bees boiled out has left a record for mad bees in Canady. He says they seemed

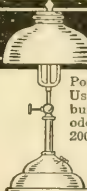
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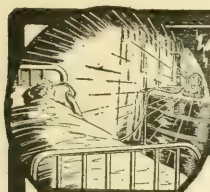
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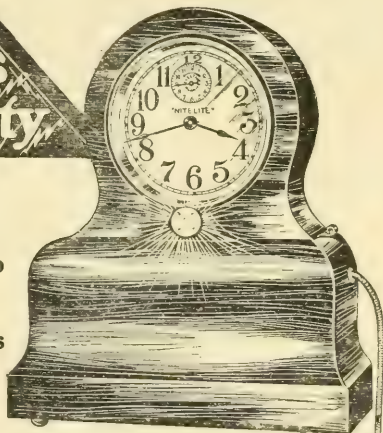
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Around the Office - Continued

irritated as agin the goats, and began show-in' it right away. That was just where a doggasted lot of stingin' bees, knowin' nothin' about goats and hot headed both ends,—opened up the wrong package for oncet, so they did. A goat ain't much for turnin' one cheek to be stung just after the other one has been stung. Not so anybody can notice it he ain't. He is just as peaceful as anybody else till he ain't so and when he ain't he ain't nowise that way. He's for just plain and unendin' war then. He's a good shot, too. Any of you readers that's ever been standin' back and more to him trustin' in his peacefulness when he has suddenly declared war in his heart without givin' due notice, know whether he can hit a stationary mark or not. Well, them hives was stationary. The two goats, chained up as they were, began doin' team work on 'em, first takin' the one they had tipped over and whose bees had commenced the row. Holtermann says it was just as pretty work as ever you see. They went over the top side and side, and struck that first hive with that jump-and-side-curve swing of theirs kerplunk! Well, sir, all that was left of that hive was some disjointed boards, smashed combs, smashed frames, fozzled brood et cettery, and about 50,000 thousand of the most surprised bees in North Ameriky. By gosh, they were surprised! They weren't lookin' for no such response as that to their humble efforts. They never afore had got any such complete results as that and so promptitudinously. Neither moreover and likewise had they ever seen the game played that way before. They just seemed to lay off and begin examinin' one another's stingers for each other to see if they were real stingers any more. But did them goats hesitate? They did not. They had enlisted for the entire duration of hostilities, scemin'ly, and in just plain busi-

Around the Office—Continued

ness fashion they pushed the campaign right ahead to the next hive. Another of their side-curve jumps right together, and there was more splinters, and another colony of bees was out of house and provisions and some disconcerted, too. It was all so sudden with 'em. Holtermann says darn if them goats didn't take just 20 out of them 23 hives, one after another, butt-bang-splinters-and-honey, and would have butted the other three into the middle of the next week, if the poor beekeeper's wife standin' on the side lines hadn't a finally stopped wringin' her hands and moanin' long enough to send a sympathizin' neighbor who got on the scene down the road a ways to a old beekeeper for help. He came runnin', a bee veil, overcoat, gloves and two pairs of trousers on, and finally got a holt of the chain that linked those two earnest, hard-workin' goats together, and pulled 'em off the job. He had to pull some, too, for them goats had got their eyes lit up with victory and high purpose by that time, and they was lackin' only about two minutes of showin' some miscalculatin' Ontario bees what a clean job looks like; also what bees can accomplish by urgin' goats on.

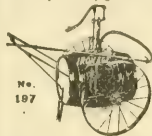
There ain't much moral to extract from this sorrowin' scene except that A. I. Root better draw in his horns on advisin' beekeepers about goats too much; also that it's

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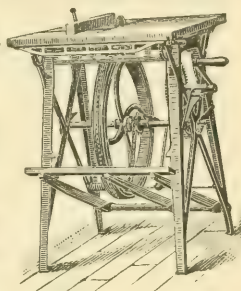
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Around the Office—Continued

about the first time durin' all history that any kind of human—even the poor, down-treadin' beekeeper kind—has found the sort of occasion when he would like to be the goat.

I'm gettin' so long winded, I don't get around to treat on half the subjects put up for my consideration and reflexion. I meant to give my friend (it ain't HE that ain't my friend in his family) J. L. Byer a good deal of a discourse as to what a feller is to do when he wants to do somethin' and daresn't, because he's afraid of his wife. I know, I do. He's come to the head fountain source of information exactly for instruction concernin' this dangerous topic. No man livin' is better authority than a man who loves fishin' and whose wife don't but does love good garden sass and industry. I shan't give my treatise on "How to Fool Your Wife" in this Gleanin's, friend Byer. There ain't time or space after givin so much to A. I. Root and two goats. But seein' you are thinkin' along this line, I want to save you possible complications by jest sayin' this right here: If you ain't good at foolin' a wife, don't try it not onet even. As I've got so I say to my fishin' friend, Ab. Lutz, when he comes along flourishin' a fish pole back side of my garden, when I'm hoein': "Ab, I better hoe right here all summer than to get caught lyin' again." That's so, too, Mr. Byer.

"Being without Gleanings is like having your wife away from home."—W. U. Bleasdale, Conneaut, O. Gosh! I wonder if that feller Bleasdale likes Gleanin's?

I ain't ever done anythin', as I am knowin' to, to Freeman B. Reeder, of Shamokin, Pa., that he should want to see me all clawed up, crunched together and strewn round promiscuous all to pieces. Yet he sends this

suggestion along: "I can't wait till M.A.-O. gives that dear and grand old-young man, Dr. Miller, a most hearty shaking-up among the ads. of Gleanings. I think it would help keep him with us much longer." Yes, that's all right, but what I want to know is, would it be likely to help keep me with us much longer? As I have heretofore said, I would like to see some disputations sunofagon put on the gloves and lock horns with Dr. Miller. But as for myself I ain't a candidate or a darkhorse even. I am for peace continuous right along with the old apicultural lion of Marengo. But I'll help egg on any rumpus that anybody else anywhere wants to start with him.

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(horizontal) solves the spraying problem for the busy farmer. Can be used in any wagon, cart or sled. Reliable easy-working pump placed outside the barrel—prevents rusting—all parts easy to reach. 100 to 125 pounds pressure with two nozzles. 50 and 100 gallon sizes. We make a full line of sprayers. Write today for our free booklet.

Barrel Sprayer

Bateman M'g Co., Box 20E, Grenloch, N.J.



"I have grown Kellogg strawberries exclusively for the past fifteen years and seldom make less than \$1200 per acre. Last year I made \$1500 per acre from Kellogg's Everbearing Strawberries. I visited your farm last October and was convinced that you do even more than you claim. Your strawberry book has been worth its weight in gold to me."

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Vermont.

This Man Made \$1500 Per Acre from Strawberries

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Growers everywhere are making big profits from Kellogg Strawberries. E. D. Andrews of Michigan paid for acozy \$4000 home from two acres of Kellogg Strawberries. J. A. Johansen of Nebraska made \$670 from only three-fourths of an acre.

Kellogg's big red strawberries are the biggest, sweetest and most delicious strawberries grown. You can grow them right in your garden or back yard.

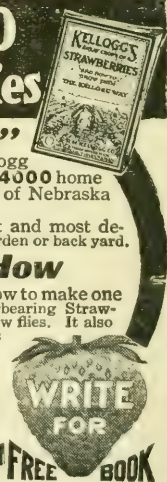
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Get this book and make \$500 to \$1200 per acre. It tells how to make one acre do the work of two and about Kellogg's wonderful Everbearing Strawberries which are loaded with big, red berries from June until snow flies. It also explains the big cash prizes we offer boys and girls, and contains

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KELLOGG'S
STRAWBERRIES

WRITE
FOR
FREE BOOK

SPRING IS HERE!

BEES have wintered better than was expected considering the severe winter in the north. The outlook is very bright for a big honey crop. Place your order for supplies while there is still time to get them.

Root Hives The kind with the durable metal cover. Standard thruout the world. Famous for their accuracy and completeness.

Root Sections . . Made with a shear-cut V-groove cut from clear, white basswood; fold without breaking, highly polished.

Root Foundation Made on machines of our own manufacture. We made the machines used by every maker of comb foundation in the world.

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Root Veils. Made from best materials. Most easily adjusted. Fit every requirement.

Root Extractors . Easiest running. Equipped with slip-gear device. Friction drive for power.

Order Now. You haven't a day to spare, if you would be sure of getting your supplies.

The A.I. Root Company
Medina, Ohio

New York	Philadelphia	Chicago	Norfolk
San Francisco	Los Angeles	St. Paul	
Indianapolis	Syracuse		

**IF IN NEED OF SUGAR FOR SPRING FEEDING
WRITE US AT MEDINA. We May Be Able to Help You**

Anticipate Your 1918 Bee Requirements Now

Help Us Co-operate with the Government by Ordering Your Bee Supplies for Next Season Now. . .

Transportation conditions may **not** permit of prompt shipment later on---Now, of all times, the beekeeper "**SHOULD NOT PUT OFF UNTIL TOMORROW WHAT HE CAN DO TODAY.**" You owe it to your country and to yourself to prepare at once for the gathering of the 1918 crop.

Have You Enough Hives?
Have You Enough Supers?
Have You Enough Frames?
Have You Enough Sections?

And have you enough of the rest of the things you will need?

The Lewis Factory is now operating night and day to take care of the season's demands.
Help us while we are helping you---Place your orders now so manufacturers and dealers can help their country, your country, you and themselves by preparing now for your needs.

The New Lewis Catalog is now out.

G. B. Lewis Co. . . Mfrs. Beeware
Watertown, Wisconsin

Cleanings in Her Culture



When the Day is Done

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you spot cash for anything you sell us.
Get our prices on cans and cases.

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The BARKER WEEDER, MULCHER and CULTIVATOR, 3 garden tools in 1, cuts the weeds underground and breaks the hardest crust into a porous moisture-retaining mulch. "Best Weed Killer Ever Used."

The BARKER has eight steel blades which revolve against a stationary steel knife running just under the surface. The combined operation of blades and knife destroys the weeds and forms the necessary mulch—INTENSIVE CULTIVATION. A child can operate it. Makes gardening profitable and a pleasure.

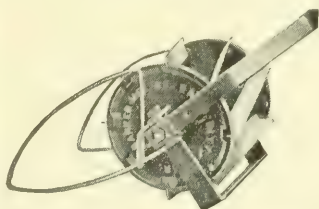
The BARKER is adapted to all gardening, in any soil, and can be used throughout the season. Works right up to plants. Has leaf guards. Cuts runners. Does far better and much faster work than a hoe or wheel hoe. Has easily attached shovels for deeper cultivation. Strongly built. Pays for itself quickly in bigger, surer crops with less worry and work.

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tells about the marvelous machine. Sent postpaid on request. Write for it today.



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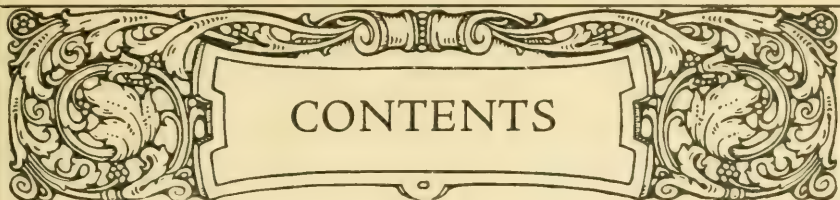
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"Barker Mfg. Co., David City, Neb. Dear Sirs:—I have received the Weeder which you so kindly send us for demonstration work. I have given it a try out and like it very much. It is the best of any that I have ever seen. I am very glad to have this on the Farm and will take pleasure in recommending it to any one who desires a weeder.—T. S. Parsons, Agronomist, University of Wyoming, Agricultural College and Experiment Station, Laramie, Wyo."

Scores of others have written us praising the BARKER.

Send Now for our free garden book and factory-to-user offer.

BARKER MFG. CO., Dept. 10, David City, Neb.



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Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly.

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

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Managing Editor

We offer you even better service
than ever before at our new loca-
tion.

Come in and see us.

Have you receiv-
ed our new cata-
log?

Write for our
1918 Bee Catalog
now.

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YES. READ HOW

If your banker said to you, "Mr. Brown, buy that piece of land next to you at \$100.00 per acre, it will be worth \$2,000.00 per acre this coming summer." Would you buy it to-day or wait—well, until later on? We are sure you would not delay one moment.

We offer you the same kind of buy—that is, make \$20.00 on each \$1.00 invested. Buy your sections and bee-supplies NOW for the sections cost less than \$1.00 per hundred and next summer when they are filled with honey, they will be worth \$20.00—think of it, those same sections that you bought for \$1.00. The same holds good on other supplies, ORDER NOW and tell your neighbors to do the same or Mr. Railroad Embargo "will buy that piece of land next to you and you'll be left."

Old Comb

Ship your old comb and cappings to us for rendering. We charge you 5c per pound for the wax rendered and pay you the highest market price.

Wax and Honey

We always buy Comb and Extracted Honey as well as Beeswax, so when you have the above to offer, write us and you will be well pleased.

FOUR REASONS FOR OUR SUCCESS

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QUALITY

Lewis' Beeware

If you have used LEWIS' BEE-WARE, you know the quality, if not this is just the time to invest your money where the results are lasting.

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PRICE
SERVICE

DADANT'S
FAMOUS
FOUNDATION

R O O T'S
SMOKERS and
EXTRACTORS

The Fred W. Muth Co.

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Cincinnati, Ohio

"Quality Counts With Us."

EVERYTHING FOR THE BEES AND ALL ROOT QUALITY

BUCKEYE BEE HIVES

Warmer in winter—cooler in summer.

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Eight-frame or ten-frame.

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To suit your needs.

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For amateur or commercial producers.

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With or without bees.

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We have the kind and size you want.

SECTIONS

Fourteen sizes in stock.

COMB FOUNDATION

Weed process—the best yet.

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Two, four, six, and eight frame.

Beeswax Wanted.

Send for Catalog.

M. H. HUNT & SON

510 NORTH CEDAR STREET

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Read Order Early

Owing to the congestion of freight and embargoes we caution all beekeepers to get their order in early, otherwise you will suffer a great loss when you actually need goods, and you perhaps will be unable to get them for the above reasons. We have a large stock on hand, and can fill orders promptly, provided the railroads will accept freight.

Send for Our New Catalog

C. H. W. Weber & Co., Cincinnati, O.

2146 Central Avenue

HONEY MARKETS

There is very little new to report as to the honey market. During the last month several carloads of extracted have been sold on the Pacific Coast at 17½c. Several carloads from the Rocky Mountain territory have been sold to Eastern buyers at prices ranging from 16½c to 19c. New crop Florida honey, orange and palmetto, is coming onto the market at 16c f. o. b. producers' shipping point. The demand to supply domestic consumption is rather irregular and uncertain. The demand for export is good, which probably means that as long as the war lasts this demand will continue even at the present high prices. Just here is a matter for thoughtful reflection. It is has been the foreign demand for American honey that has made high prices—not the domestic demand. The consumption of honey in America during 1917 was not so large as in 1916. Had it not been for the trans-Atlantic need of honey, extracted honey would not likely have gone above 11 or 12 cents. This is the assertion of one of the best informed honey buyers in the United States. The unfortunate circumstance is, that Americans are not learning to eat honey in these days of food shortage nor becoming acquainted with it as a staple food. It is more than ever a luxury—which would be all fine for the beekeeper (from a purely financial standpoint) if the war were to last forever. But it isn't going to last so long as that. When it ends, a readjustment of honey prices will follow.

General Quotations of Wholesalers.

[These firms are asked to quote the wholesale prices they make to retailers. Accordingly, their prices must be figured at least one profit higher than the price paid the producer. The large dealers do not quote prices in print that they will pay futurally to producers.]

CHICAGO.—Since the weather has moderated quite a showing of comb honey has come forward and the No. 1 to fancy sells at 25c to 27c per pound; extracted white, 18c to 20c; amber, 16c to 18c per lb., according to kind and quality. Clean, average yellow beeswax, per lb., 40c.

R. A. Burnett & Co.

Chicago, Ills., March 16.

ST. LOUIS.—This market is entirely bare of fancy comb honey. Small shipments of No. 2 local arriving, which sell from \$4.00 to \$4.25 per case. Very little extracted honey in jobbers' hands. Extracted, amber, 16c to 18c. Clean, average yellow beeswax, per lb., 38c.

R. Hartman Produce Co.

St. Louis, Mo., March 15.

PHILADELPHIA.—We are entirely cleaned up on all grades of honey, both comb and extracted. Clean, average yellow beeswax, per lb., 42c.

Chas. Munder.

Philadelphia, Pa., March 15.

BUFFALO.—No strained or comb honey on this market. No quotations available. Several inquiries for honey, but nothing to offer.

Gleason & Lansing.

Buffalo, N. Y., March 15.

SYRACUSE.—Comb honey practically out of market and extracted pretty well exhausted. We have had a very little honey offered lately at practically prohibitive prices.

Syracuse, N. Y., March 16.

E. B. Ross.

PORTLAND.—Market is practically bare of comb honey, with no offerings from the producer. Extracted honey in fairly good demand, but stocks are being cleaned up. Comb honey, extra fancy, per case, \$5.00; fancy, \$4.75; No. 1, \$4.50. Extracted honey, white, 18c to 20c; light amber, in cans, 16c to 18c. No beeswax offered. Pacific Honey Co.

Portland, Ore., March 11.

MONTREAL.—Stocks light. Comb honey, extra fancy, 25c; fancy, 24c; No. 1, 22c; No. 2, 19c. Extracted honey, white, 21c; light amber, in cans, 19c; in barrels, 18½c; amber, in cans, 18c; in barrels, 17½c. Gunn, Langlois & Co., Ltd.

Montreal, Can., March 15.

TORONTO.—Stocks of honey are practically exhausted, and there is really no market at present.

Toronto, Can., March 16. Eby-Blain, Ltd.

HAMILTON.—There is no honey offering here now and none in stock except a few 10-lb. tins. Extracted honey, white, 23c in 10-lb. tins.

F. W. Fearman Co., Ltd.

Hamilton, Ont., March 15.

CUBA.—Extracted honey, light amber, in barrels, \$1.80 per gallon. Clean, average yellow beeswax, per lb., 37 cts.

A. Marzol.

Matanzas, March 10.

LIVERPOOL.—The good demand for honey still continues and prices are higher. For fine extracted honey we quote 32 cents per lb., wholesale price; for retail quantities the price runs up to 48 cents per lb. The following transactions have been made: Chilean, 650 barrels have been sold as follows: No. 1, per bbl., \$35.75; No. 2., \$34.50; No. 3, \$33.25; ungraded, \$28.50. Spanish, 89 cases sold at \$34.75 to \$35.50 per cwt. Jamaica, 50 barrels sold at \$34.50 to \$37.00. St. Lucia, in tins, \$34.75 to \$35.75 per cwt. San Domingo, dark to palish, \$33.00 to \$34.50 per cwt. Californian, amber in tins, \$35.50 to \$36.50 per cwt. Beeswax.—Owing to the demand for Russian being non-existent the demand for this has gone off, and sales are difficult to make. We quote 49 to 59 cents per lb. Chilean has been sold at \$52.80 to \$55.80 per cwt.; Jamaica, same price; East African is worth \$47.50 to \$49.88. Liverpool, England, Feb. 6. Taylor & Co.

U. S. Government Market Reports.

(The prices quoted in this report represent the prices at which the "wholesale carlot receivers" sell to the "jobbers." Arrivals include receipts during preceding two weeks. Prices represent current quotations.)

St. Louis.—No arrivals. Supplies very light. No sales reported.

New York.—1,120 barrels Cuba and 44 barrels South America arrived. Demand good, market stronger. Extracted honey; domestic yellow, supplies very light, 21c-23c per pound; West Indian light, 19-20c, dark 18-19c per pound. Beeswax, 121 boxes, 92 bags, 70 crates from Cuba, and 38 bags South America arrived. Supplies light, demand good, market strong. Yellow, 40-42c; dark 38-40c per lb.

Philadelphia.—No arrivals, no demand. Comb and extracted honey, and beeswax, no sales.

Cincinnati.—No fresh arrivals. Extracted honey: demand good, movement brisk, market strong; domestic dark amber, 17c; light amber, 19c; orange and white sage, 23c per pound. Comb honey: supplies exhausted. Beeswax: demand good, market firm, average yellow, 43-45c per pound.

Kansas City.—No fresh arrivals. Practically no demand or movement, market firm. Comb and extracted honey and beeswax, no sales reported.

Denver.—No fresh arrivals. Demand good, market strong; no jobbing sales. Sales direct to retailers. Comb honey: Colorado, white, 24-section cases, extra fancy \$6.00. Beeswax: receipts moderate, price to producers, 38c per pound.

Chicago.—Receipts and supplies very light. Demand good, market firm. Best northern stock, comb honey, mostly 26-27; extracted, mostly 18c per pound.

Minneapolis.—No arrivals. Supplies very light. Demand good, market firm. Comb honey supplies practically exhausted. No sales reported. Extracted strained honey, few sales direct to retailers, 20c per pound.

(This honey report will be discontinued with this

issue until the new crop begins to move, about June 1.)
 Charles J. Brand,
 Chief of Bureau.

STATEMENT OF OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., OF GLEANINGS IN BEE CULTURE, PUBLISHED MONTHLY AT MEDINA, OHIO, REQUIRED BY THE ACT OF AUGUST 24, 1912.

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 E. R. ROOT, Editor.

Sworn to and subscribed before me this 21st day of March, 1918.
 (Seal) H. C. WEST, Notary Public.

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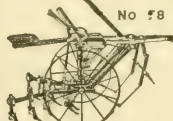
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CHICAGO HOUSE WRECKING CO.

Quick action on your part is really necessary if you wish to get your share of these unheard of savings. So, don't delay—sit right down and write your order now. Every offer below is covered by our satisfaction or money-back guarantee.

Order Today From This Bargain List!

Ajax high grade rubber surfaced Roofing; put up 108 sq. ft. to the roll. Complete with nails and cement. Lot No. GC302, 3 ply, roll \$1.27; 2 ply, roll \$1.17; 1 ply, roll \$1.07.

Rawhide Stone Faced Gold Medal Roofing guaranteed 15 yrs. Rolls contain 108 sq. ft., nails and cement included. Lot No. GC303, Roll \$2.20.

Our famous Rawhide Rubber Roofing, 3 ply, guaranteed for 12 years; a high grade covering. Rolls contain 108 sq. ft., nails and cement included. Lot No. GC304, 3 ply, roll \$1.50; 2 ply, roll \$1.40; 1 ply, roll \$1.20.

10,000 Rolls of Extra Heavy high grade Roofing; Red or Gray Slate Coated, Rock Faced, Brown Pebble Coat, Double Sanded, Mineral or Mica Surfaced. Lot No. GC305, roll 108 sq. ft. with nails and cement \$1.90.

28 gauge, painted, 2½ in. corrugated overhauled siding sheets; 5½ ft. long, Lot No. GC306, 100 sq. ft. \$2.50.

26 gauge painted 2½ in. corrugated overhauled roofing sheets, Lot No. GC307, 100 sq. ft. \$3.00.

24 gauge Extra Heavy painted 2½ in. corrugated overhauled sheets for roofing barns, granaries, etc. Lot No. GC308, 100 sq. ft. \$3.50.

If you need further information before ordering, send us a rough sketch of your building showing size of roof, length of rafters, etc. Mention the kind of roofing you wish and our low freight paid prices will follow.

ADDRESS OWNERS:

HARRIS BROTHERS CO., Dept. GC-294
 35th & Iron Sts., Chicago



WANTED, 25 MORE TONS BEESWAX for MANUFACTURE INTO

SUPERIOR FOUNDATION

(WEED PROCESS)

"BEST BY TEST"
PRICES ON REQUEST

SUPERIOR HONEY CO.
OGDEN - - - UTAH

We offer for beeswax 37c cash per pound F. O. B. Ogden, Utah, or 40c in trade. Send it along.

Note: We also manufacture beeswax into foundation at moderate manufacturing charge. Write for prices. Your foresight now will fortify you against advanced foundation prices and delayed shipments for the season of 1918.

Old combs and Cappings rendered on shares. Our high pressure steam equipment secures every ounce of beeswax.

WRITE FOR TERMS.

NOTICE

Beekkeepers' Supplies

We are now located in our new plant equipped with the latest machinery for making supplies. Write for catalog, which will be ready for mailing in January.

We Can Save You Money

no matter how large or how small your order is. A trial will convince you. Quality first

We also render your wax from old comb and cappings. Our charge is only 5 cts. per pound for the wax rendered. Our steam press extracts every particle of wax possible to get.

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TODAY is not one bit too early to order your Bee Supplies. If you should wait until July 1st, we would try just as hard to handle your order promptly, but you know what embargoes and freight conjections mean, especially if you are one of the thousands whose goods were tied up in transit last year until the honey season was over.

IF WE ALL MAKE ONE GOOD LONG STRONG PULL TOGETHER, we won't feel like slackers, and after the war is over we won't feel like sneaking out of sight when war times are mentioned.

Our part is to make supplies as good as we can and as fast as we can — your part is to give your bees the best care you know how to give them, and to make them produce all the honey possible.

To do this YOU MUST HAVE PLENTY OF HIVES, SUPERS, FRAMES, FOUNDATION, EXTRACTORS, SMOKERS, PLENTY OF EVERYTHING, used in your work, and YOU MUST HAVE THEM IN TIME TO USE THEM.

THE GOVERNMENT IS SHIPPING HONEY TO THE BOYS IN FRANCE — IT HELPS TO KEEP THEM FIT. We're trying to do our part. Let's pull together and help the boys take another trench. Don't wait another day about sending us your order.

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Kretchmer Manufacturing Co.

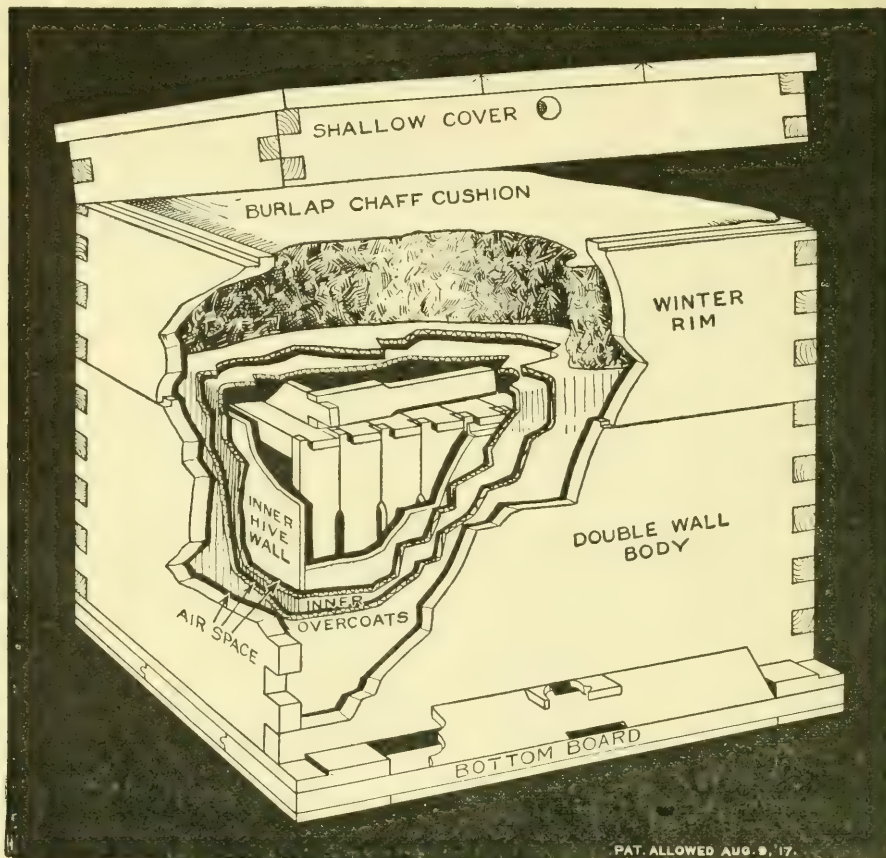
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By Woodman's Improved Protection Hive

"The Hive With an Inner Overcoat" 100 PER CENT PERFECT PROTECTION BY TESTS, WINTERS OF 1916-17-18.



THE INNER OVERCOAT DID IT. Without any special preparation we have wintered bees in these hives without loss. It is a joy to see the condition they are in, when compared with other styles of hives and wintering methods. The INNER OVERCOAT is telescoped down over the brood nest, in between the outer and inner hive walls, when preparing them for winter. In the spring it is removed and stored away in the K. D. flat. Not more than two minutes are required to pack or unpack a hive by this method. The INNER OVERCOAT affords more protection than several inches of ordinary packing material. Send for a special circular showing 10 large illustrations.

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Friction-Top Pails, any size furnished and in quantities as you may desire. Send us a list of your requirements and let us quote prices as we can save you money. The tin can factories are rushed with orders, the tin plate situation is serious and transportation slow, so it will be wise to place your orders early.

A. G. Woodman Co., Grand Rapids, Michigan

Now is the Time to Prepare

The largest stock of The A. I. Root Company goods are here ready for shipment. It will be no use to urge beekeepers that wait till a new swarm clusters on a tree to order early, but if you are in need of goods next June we will ship promptly at that time as well as now. It is up to the railroads to make prompt delivery. We will care for you the best we know how whenever you send in an order. Catalogs for 1918 are now ready, and a copy will be mailed on request. Better send for one and make out your order today.

F. A. Salisbury, Syracuse, N. Y.
1631 West Genesee St.

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FOR WAR FOOD



A Glorious Opportunity for Beekeeping

NEVER BEFORE has beekeeping had such an opportunity to prove its usefulness. Beekeeping is the only means of saving the tons of honey now wasted. Every beekeeper must help, but the commercial producers can do most.

WHAT DOES IT MEAN when beekeepers are permitted to buy sugar during a sugar shortage in order that their bees may not starve? **Why** do the beekeeping supply factories run on fuel-less days? Honey is an important food.

More Honey Is Needed

THERE must be an increase in the production of all foods, but the shortage of sweets is especially acute. There must be more Honey.

HOW CAN IT BE PRODUCED? The Nectar supply of 1918 is still uncertain. However, a failure of the crop is more frequent than a failure of the nectar supply. The beekeeper must have his bees ready to get all the Nectar.

NOW IS THE CRITICAL TIME. The good beekeeper does two things: He has colonies strong before the honey-flow.

He prevents division by swarming.

THE GREATEST LOSS is through failure to have bees ready on time. **Now** is the time to begin plans and preparations for the honey-flow. Delay may decrease the crop one-half.

WHAT BEES NEED. To reach maximum strength early, bees need only three things:

Plenty of stores.

Plenty of room for breeding.

Plenty of protection from cold and wind.

Most beekeeping failures are due to neglect in preparation for the honey-flow. Each colony should have ten frames of brood when it begins.

OTHER PREPARATIONS. Buy or lease unproductive colonies. There may be a thousand in your county. Order necessary supplies at once. Watch for brood diseases this summer.

MARKET the crop intelligently, after studying the bulletins on the Bureau of Markets.

Keep More Bees

Can the Department help you? There are several offices in the Department of Agriculture which are anxious to help beekeepers increase their honey crops this year. There are in many of the States, Inspectors and Extension Beekeepers who are at your service. The Department can tell you who they are.

Keep Bees Better

If your bees are unproductive, place them in the hands of a good beekeeper and let them do their share.

U. S. Department of Agriculture
Washington, D. C.

GLEANINGS IN BEE CULTURE

APRIL, 1918

EDITORIAL

THE MEETING of the National Beekeepers' Association at Burlington, Ia., on Feb. 19-21,



**The Future
of the
National
Association.**

which has now gone into history, did good work in the selection of new officers, men being chosen that we believe will be live wires. The new president, David Running of Filion, Mich., is one of the best presiding officers of beekeepers' meetings that we have in the country. He has a wonderful faculty in drawing out discussion and clearing up conflicting testimony. We doubt, too, if there is a better posted beekeeper anywhere. The secretary, Frank Markham of Ypsilanti, Mich., is also a honey producer, whose skill is attested by the fact that he holds a gold medal of the Michigan Beekeepers' Association. The vice-president, Hamlin B. Miller of Marshalltown, Ia., is not only an enthusiastic beekeeper but a good man to build up an association. The Iowa State Beekeepers' Association, of which he is secretary, is one of the strongest and best in the whole country. Almost every Iowa beekeeper, and many outside of the State, know "Ham", whose middle name is "Beeswax." Taking it all in all, the combination of officers is a peculiarly fortunate one.

The National Beekeepers' Association has gone thru a varied experience. At one time it had a membership of some two or three thousand with \$4,000 or \$5,000 in its treasury. We have attended some of these meetings when the attendance was 500 and more. At the time of its greatest prosperity there were a few who thought that there were too many supply dealers and bee journal editors on the board of directors for the Association's good, and for a few years there was more or less clashing at its meetings on account of this fact. The result was that the organization went to pieces. While it was intended as a sort of insurance organization to protect the beekeepers against persecution of certain persons who believed that the business of beekeeping was an encroachment upon their rights, it gradually merged over into a fraternal and social organization. Its membership continued to drop and the attendance at several of the meetings was little more than local, sometimes not over 50 being present. An effort was then made to re-organize it on a delegate basis, but this fell thru be-

cause the plan was too elaborate or too something.

Finally, when Francis Jager of Minnesota and a man of vision, became president of the organization, he made it plain that the National ought to do something in a national way, and notwithstanding that he was otherwise occupied, and notwithstanding that he was sent on a special mission to Europe during the past year by the Government, the organization under his leadership attempted and did some things that have meant a great deal of good to the beekeepers of the country at large. It was instrumental in securing financial help from the Government until now we have \$50,000 a year, with 11 special field agents operating under Dr. E. F. Phillips of the Bureau of Entomology, Washington, D. C., and giving their whole time to develop beekeeping in the United States.

The National was likewise instrumental in getting from the Bureau of Markets regular market quotations, secured by excellent men, free from any possible financial bias. That the Bureau of Markets is going to be of immense help to the beekeeping industry of the United States, has now been demonstrated beyond any question of doubt.

If the National had never done anything more than these two things, even with its present limited membership, it would well have served its purpose. The retiring president, Francis Jager, shows that he was thoroughly alert to the needs of the organization and the beekeepers of the country. To report all that he said at the last meeting at Burlington would fill too many pages of Gleanings. It is to be hoped that the new officers will carry out at least some of the policies that he recommended. He now returns to Europe soon to go into the American Red Cross Work.

It will take careful deliberation to mold the policy of the Association. It will result in loss of ground if the Association tries to adopt the schemes of every man who comes to the meetings and talks loud. In all the beekeepers' associations there is too great a tendency to put into office men with wild plans who talk well. Above all things a national organization must keep its feet on the ground and must not listen to men of untried ability and visionary schemes. This is the rock on which the National nearly split, and the wise man profits by such mistakes.

Then, what of the future? Hardly a day

passes now but the beekeepers of some county organize a local association, most of these organizations being formed at meetings held by the extension men of the Bureau of Entomology. This is excellent work, most of which will be of lasting value. The county clubs in California have shown what may be accomplished, and their work has only begun. It appears that the smallest units are being organized, and the logical step would be for them to affiliate with the state associations. Too many of our state associations are dead—deader even than some erroneously believe the National to be. They need new life, and they will surely get it when the county organizations begin to send representations to the annual state meetings.

With rejuvenated state associations, the National must of course become strictly a representative body with delegates from the states. This was tried a few years ago, as has been said above, but the effort was premature, for many state associations were not strong enough to send delegates, and there was also a division of opinion as to the policy of the National. It now having been shown that no National organization can safely enter the marketing field headfirst, the policy of the National is definitely that of education. Some day when there are more commercial beekeepers and when marketing is standardized, perhaps there can be a nationwide organization for marketing; but this, of course, can not be made from the top down.

Gleanings welcomes the organization of local or state marketing organizations, for they have proven their worth to beekeepers. Every friend of beekeeping must do so.

Gleanings believes that the revival of the National can progress only as rapidly as the state associations revive. Too many state associations have retained their officers too long, which almost invariably leads to a moribund condition. War calls for changes, and beekeeping is at war. General Pershing has sent some officers back from France because they lack "pep." Most of the associations have now elected their officers for the coming year. If the officers of your state association are not much in evidence during the coming season in the effort to increase production and build up the state organization, put them out of office at the next state meeting. Do it politely and without generating hard feeling, but do it. Many state associations meet only once a year, and in many cases the members hear nothing of the association except just before the annual meeting. The officers should do more than this. They can arrange field meetings, can help their organizations by publicity, and can often send helpful circulars during the year. They can see that all the members who sell on wholesale markets receive the Government market reports. They can support, and, if need be, wake up the beekeeping work at the agricultural colleges. Look into these things during the year—do not wait for the annual meeting to decide whether your association needs new officers. Don't forget, too, to lend

your state officers all possible aid and co-operation.

One of the duties of the state officers is to help President Running boost the National. That duty is not specified in the by-laws but it should be on the conscience of beekeepers. See that your officers boost the Government activities and, if they do not, find out why. If this is done all 'round, President Running will receive all the co-operation he can hope for.

Let us see the National next year is made up of delegates of our state associations. Will you help? Will you be there?



DR. EDW. F. BIGELOW, editor of The Guide to Nature, in the February issue of



Again—How
Do Bees Build
Their Cells?

that journal, published an exhaustive article on "How Honeybees Produce Honey-

comb," in which he seeks to demonstrate that "in making the comb, the honeybees never work in hexagons, but always in circles." His article is in contravention of the long and universally accepted theory that bees intentionally build their combs hexagonal. The Literary Digest for March 16, in its department of "Science and Invention," quotes the bulk of Dr. Bigelow's theory as printed in The Guide to Nature, thus giving it very wide circulation—if not approval. In a nutshell, Dr. Bigelow holds that the honeybee deserves not one particle of credit for making a beautiful hexagon; that all she does is to make a rude cylinder (circular) of wax, and by going in and out of such cylinder (which adjoins six like cylinders) she pushes out the sides, and it is this pressure on the sides of the cylinder, taking up the inter-cylinder space, that makes the hexagon. In other words, circular cells built in close contact become hexagonal when compacted together by pressure from within the cells. The English authority, Cowan, has set forth this theory of cell-building, quoting Mullenhoff in support of his own view. Cheshire is another authority who inclines to this theory. Huber does not do so, and most of the latest authorities do not.



THE ARTICLE by Chalon Fowls on page 215 of this issue suggests that perhaps



The Let-Alone-
Hive and Its
Limitations.

we ought to set a definite limitation on the scope of the "let-alone hive" or "let-alone system."

In the article on page 143, March issue, where we describe Allen Latham's "let-alone hive," we were merely showing what had been done and what might be done under some circumstances.

It's not to be understood that once-a-year visitation to such hives would suffice in the great majority of cases. It would never do

where there are bee diseases, nor for most inexperienced beekeepers. There are some practical beekeepers, however, who make a success of running their bees at long range and visiting them only once or twice in a season—once to take off the honey and again to put them into shape for winter.

Allen Latham of Norwichtown, Conn., has done it, but on account of the possibility of bee disease may not find it practical to continue it. The average beginner would do well to look the hives over a number of times in a season, but not too often. In this connection it may be well to say that many beginners "tinker" their bees to death.

But no let-alone hive will work unless it has a large capacity, a location screened from prevailing winds, and unless in a locality where there is an unfailing fall flow. There is a large field for development in the Latham plan. Latham plan did we say? We mean, development of the large-hive idea, which is as old as the hills. There is no question but that a hive of large capacity requires less attention than one made up of small units requiring the addition of an extra unit every now and then. In a small hive the bees are liable to starve for the want of stores either during the summer or winter, unless frequently inspected, while the hive of large capacity that is not "tinkered" with too much may carry a colony thru from year to year with once-or-twice-a-year visitation, providing the locality is suitable and the right man is on the job.



THE SUGAR SITUATION, while not as tense as it was, is far from being satisfactory.



The Sugar Supply for Beekeepers.

Large quantities of sugar have been sent inland from both coasts.

More sugar is available, but not enough to supply many beekeepers who are urgently in need of it.

Some states have already followed Ohio's example by gathering up a supply of sugar exclusively for the use of beekeepers. This sugar has been put into the hands of local bee-supply manufacturers and is being sold at cost.

As Gleanings was instrumental in buying about 10,000 pounds of sugar for Ohio beekeepers and a supply of this is still on hand at Columbus, we can help in our own State, if Buckeye beekeepers will apply to Prof. Jas. S. Hine, Ohio State University, Columbus, or to The A. I. Root Company, Medina, O. Michigan beekeepers should write to B. F. Kindig, State Apiarist, East Lansing, Mich. He will issue a permit so that sugar can be obtained of M. H. Hunt & Son at Lansing or of A. J. Woodman & Co., at Flint, Mich. Massachusetts beekeepers should apply to Dr. Burton N. Gates of Amherst, Mass. Illinois beekeepers should apply to Dadant & Son, Hamilton, Ill.

In a general way, we would advise beekeepers who are unable to obtain sugar from

local grocers to apply to their nearest bee-supply dealer. Failing to get it of him, write to the U. S. Food Administration, Sugar Division, at your state capital, stating your exact needs, and how many colonies you have that will starve unless you can arrange to get sugar thru your grocer or supply dealer.

In very many cases, the starvation situation can be easily met by taking combs of stores from colonies that have died during the winter and giving to those that are alive. These combs will be perfectly good unless badly smeared with dysentery stains. Even then, in case of no sugar, we would give such combs. If the colony is strong it will clean up and prosper.



IT FREQUENTLY happens that there is a shortage of bees in the North and at the same time a great surplus in the South. This is especially true after a long, hard winter



Relieving the Shortage of Bees.

such as we have just experienced; but unfortunately the winter has been severe on bees in the South and many of our Southern bee- and queen-raisers are going to be hard pressed to take care of all the demands for bees.

Another condition sometimes arises and that is this: A Northern beekeeper can use, owing to the unusually favorable conditions in his locality, two or three times the number of bees that he has available. During the same season, at almost exactly the same time, there are other beekeepers in other localities where the season promises to be an absolute failure, who will have a large number of bees on hand that will be nothing but an expense. If the two men could get together, the one using the capital of the other, it would help out wonderfully during a season when there is a world shortage of food. We have a case in point. The beekeepers of the Northwest could probably use twice the number of bees that they now have. On the other hand, there are beekeepers in New Mexico and other southern sections, where the alfalfa fields have been converted into grain fields, who will have thousands and thousands of colonies that will not be honey gatherers this year.

We suggest that the considerable number of Government apicultural extension workers scattered over the United States might be able to place in touch with each other the two classes of beekeepers, those who need bees and those who have them to spare. It would do no harm for one or the other of these two classes to correspond with Dr. E. F. Phillips, Bureau of Entomology, Washington, D. C. He could put the enquirers in communication with the nearest special field agent, who might, and probably would, know just where there was a shortage or a surplus of bees, and bring about the desired combination of bees and territory.

TO winter bees successfully is one thing. To carry them thru the spring is quite another. This is only another way of saying that to "spring" bees

is often more difficult than to winter them. The latter part of March and the month of April are often very treacherous, so far as weather conditions are concerned. We may have in the North anything from zero cold to warm, balmy, summer weather. A sudden change from cold to warm, or, rather, a week of warm weather followed by severely cold weather, is very hard on the bees and brood. It sometimes happens that the mortality during the month of April is greater than at any other time in the year. During the spring of 1881, for example, in northern states, the April losses were anywhere from 30 to 60 percent, while the actual winter losses during the previous winter months were not over 10 or 15 percent.

As a general rule, however, one feels that if he can bring his bees thru in fairly good condition up to the first of April, his problem of carrying the bees thru to May or the middle of May is not a serious one.

At this point it should be made very clear, especially to the beginner, that more harm than good is often done by tinkering with bees in the spring. This does not mean that bees should be left alone during this period, for some springs they certainly do need special care.

April is usually the month for setting bees out in the spring. The rule is to wait till after the first natural pollen is abundant. More

SPRING MANAGEMENT

A Few Important Things One Ought to Do and Some Things One Ought Not to Do in the Spring

By E. R. Root

ed wire. This wire should be long enough to reach clear under the frames, and all dead bees should be raked out. Later on, when the weather warms up, enough so that bees can fly, and so that the colony can be opened without any damage, all the frames can be taken out, when the hives can be cleaned. Usually this practice is unnecessary, for a good colony will carry out all the dead bees themselves.

If any colony shows dysentery (dark brown or black spots around the entrance) there is not much if anything that the begin-

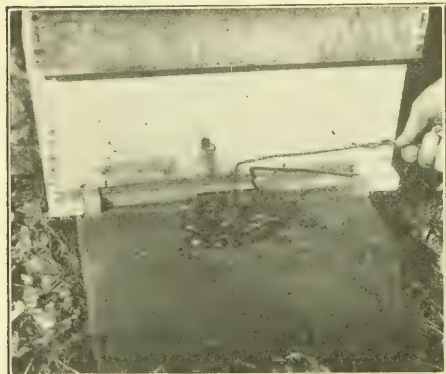
trances of the dead colonies and contract the entrances of the weak ones.

The entrances of all the live colonies should be cleared out by means of a hook-



CONTRACTING THE BROOD-NEST.

When a colony is weak in the early spring, about all that can be done is to contract the room in the hive down to the space it can occupy by a chaff division-board as shown. Care should be taken to see that it has one or more combs of stores.



CLEANING ENTRANCES.

In early spring after a long hard winter it is often necessary to rake the entrances clear of dead bees with a bent wire. Should the entrance entirely choke, it would kill the bees.

harm is done from setting out too early than too late, unless dysentery has started. Wait till a warm, sunshiny day, then set all the bees out. After they are out close the en-

ner can do except to contract the brood-nest to as many frames as the cluster can occupy. Where two colonies stand side by side it is sometimes advisable to unite the two such clusters in one hive; but in that case one of the hives should be taken away entirely and the other put half way between where the other two stood. There is not much use of uniting bees in the spring unless the colonies are side by side or in pairs. One can, however, bring weak colonies from outyards and unite each with a weak one at the home yard, but it does not do much good to take two weak colonies from remote points of the same apiary and put them together.

The beginner may ask, "What is dysentery?" Properly speaking, this is a form of diarrhea. It is caused by insufficient protection, too small a cluster, poor stores or a combination of all three. The bees in their effort to keep warm have consumed too much stores and clogged their intestines, with the

result that purging follows. When it is so bad that during midwinter the bees spot the inside and outside of their hives with large, dark-brown spots, almost black, it means almost sure death. If these signs of dysentery appear along the middle of this month or about the first of May, the colony may or may not recover itself but it will be all summer in building up to be worth anything.

If there is no fall flow, it is far better to feed the bees in the fall and give them enough food to carry them, not only thru the winter, but also thru the spring until the next honey flow. Feeding in the spring, especially liquid syrup, should be avoided wherever possible, as it causes too much excitement in the apiary, and often results, as explained, in the loss of a good many thousands of bees.

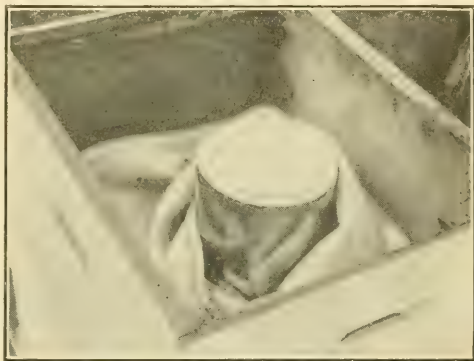
Feeding in the Cellar.

Bees can be fed in the cellar this month, during a warm day when the bees can fly, as already described. A cake of this can be laid directly on top of the cluster. In order to do this it is sometimes necessary to use an upper story or rim of wood about 1 inch or $1\frac{1}{2}$ inch deep. The candy is laid on top of the frames, the rim is set down over the hive and over the whole a cover. If the bees in the cellar run short of stores, the hard candy is preferable to anything else we know of, except actual natural stores themselves. In the case of an emergency a frame of honey can be laid on top in the same manner that candy is placed.

The hives should not be opened up except during a warm day when the bees can fly. Then it is important to ascertain whether there are sufficient stores to carry the bees thru. If the cluster is a small one, occupying only two or three frames, it should be crowded over to one side of the hive, and a chaff

The colony should then be tucked up warm and left until along about the first of May, at which time the division board may be shoved over and other frames added—as many as the bees can occupy.

Feeding liquid syrup during April in the North is always attended with more or less danger. Beginners should remember that syrup feeding at any time starts the bees to flying out at the entrance. If the weather is cold or chilly, many thousands of bees are lost. When colonies are short of stores they should be given frames of honey, or frames of sealed stores left from the previous fall or winter. For this purpose it is the practice of our best beekeepers to lay aside several hundred nice combs of honey. During this spring there will be not a few dead colonies



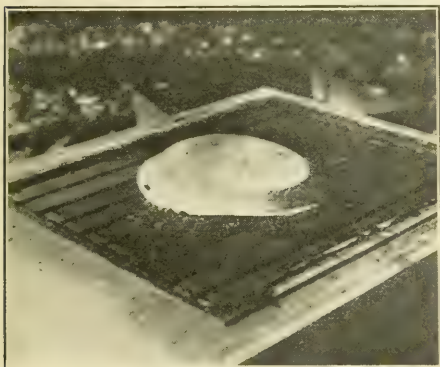
FEEDING FROM AN ORDINARY FRICTION-TOP PAIL.

This is one of the good and cheap means of feeding syrup. The top of an ordinary friction-top pail is punched with about a dozen holes, the pail filled with syrup, the top pressed in place, and the whole inverted in an upper story. The bees will take the syrup out very readily. In cool weather the pail of syrup should have packing around it to prevent the escape of heat from the cluster.

and one can take one or more combs of stores from these colonies and give to those that are alive and running short.

When one has no combs or stores of any kind, and no dead colonies to draw from, he then should feed sugar made over into hard candy, as explained on page 140 of March issue. This should be poured while hot into paper pie plates and when cold they should be inserted over the cluster of bees, but before this is done, the size of the brood nest should be contracted with the division board as already explained. To put on this candy it will be necessary to put on an empty half story or a full story when the candy should be covered with leaves or packing material of some sort.

In the more southern states or perhaps during the latter part of this month in the North, liquid food can be given safely; and one of the handiest and cheapest ways is to use in an empty super or upper story a five- or ten-pound friction top, tin pail, such as is used for retailing honey. The cover should be punched with a dozen or more holes made with a 3d nail which is about one-tenth



FEEDING CANDY IN THE SPRING.

In early spring there is danger of some colonies starving. Where there are no combs of stores, cakes of hard candy in paper pie plates are much to be preferred to feeding liquid syrup.

division board should confine it to as few frames as possible. Care should be taken that the bees have at least one or two combs of stores, and these should be placed close to and just outside of the brood, if there is any.

inch in diameter.. Then when the can is filled with hot syrup and the cover or friction top is pushed into place, it may be inverted and set down over the frames. This should be given at night preferably and under packing of some sort. If the syrup is given hot, the bees by the next morning will have taken it all out and quieted down, so in case it should turn cold that day, they will not fly out.

All entrances of colonies that are dead should be closed tight; otherwise on the first warm day the bees of the live colonies will rob them out causing more or less of an uproar, during which the weak colonies, which might otherwise have remained unmolested, may be robbed out and entirely destroyed. But the greatest danger is that if there is any foul brood in the yard, such indiscriminate robbing will cause the spread of the disease thruout the entire apiary.

Feeding Pollen Substitutes.

There is another kind of feeding that may have to be resorted to some springs, and that is the giving of rye meal in trays or inverted hive covers in protected locations somewhere in the apiary.

Perhaps once in four or five years or once in ten years, there may be a shortage of pollen in the hives. The result is that the bees in early spring, before natural pollen is available, will visit all the stables and chicken coops in the immediate neighborhood, to get ground feed. This sometimes causes considerable trouble between the beekeeper and his neighbor. When this condition arises the rye meal should be put on in the beekeeper's own yard. In order to start the bees it may be necessary to put a little syrup on the meal.

After the bees once discover where it is, they will take it quite freely and abandon the stables and chicken coops.

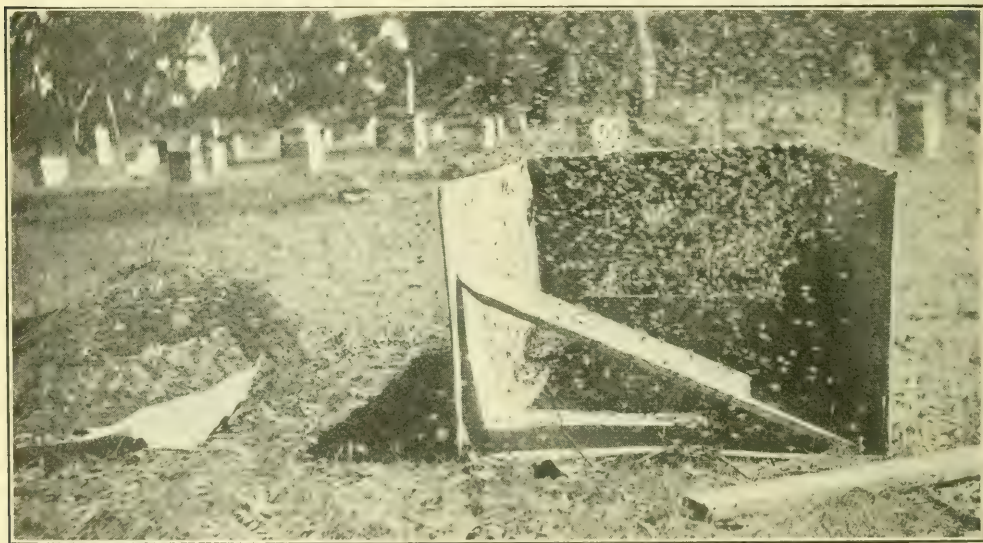
Spring Dwindling.

Beginners often hear a great deal about spring dwindling and wonder what it is. It is not a disease but a constant dying of bees until there are only a few dozen left. They may or may not show dysentery. It is usually confined to colonies that were weak or had insufficient protection during the winter. As the name indicates, the bees gradually disappear. When the cluster becomes small, the bees become active and begin to eat stores. This causes them to fly out more or less to evacuate their intestines, and, while out, they become chilled and die.

Cause and Effect of Spring Dwindling and Treatment Discussed by G. C. Greiner.

It is generally supposed that spring-dwindling is caused by unusual mortality among bees after the opening of spring. This is true in a measure; but it is not the main cause. Bees are always dying, especially at this time of the year. All the wintered stock consists by this time of old bees, and this fact alone would give them only a short lease of life-at best.

But during the warm days of February and favorable weather in March and April, they are building up their colonies, exerting all their strength and energy in bringing up their rising generations to the necessary populousness for the coming honey-flows. A little later, when nature provides its greatest abundance of pollen, generally about the middle of May, they are seen by the dozens coming home panting and loaded down so heavily



FEEDING RYE MEAL.

During some springs when bees run out of natural pollen in the combs and before the new pollen comes in, it is necessary sometimes to feed a substitute in the form of rye meal outside in a protected inclosure. This is important when bees bother neighbors by invading their chicken-coops and feed-troughs for cattle.

that they can hardly reach their alighting boards. All this is a heavy strain on the vitality of the little workers, and the supposition can safely be accepted that not many of them survive beyond the beginning or middle of June.

This is the every-day, normal routine of bee life and does not cause spring dwindling. A weak colony that occupies three or four spaces and has a little patch of normal brood in the center of its cluster can hardly be called "the result of spring dwindling." Other factors are responsible for their weakness. More likely they went into winter weak and came out weak in the spring.

When I gave my bees their first spring examination about the first week in April (a slight glance from the top to make sure they had plenty to live on), I considered them in promising condition for a normal honey crop. I could see no indications that anything unusual could or would happen. About a month later, when I unpacked them, they were so heavy that I had to call on my daughter, my usual helper in such emergencies, to help me take them out of the sheds and set them on the ground. It reminded me very forcibly of Mr. Doolittle's assertion that plenty of stores were the means of building colonies up in the spring, and I anticipated that with all that honey my bees must be getting in fine condition for my spring manipulations.

About that time I was expecting and hoping that my queens, the first installment of which I had ordered mailed May 10, would arrive in time to begin dividing at the first blossoming of the apple trees. They did arrive May 12. I prepared them for making my divisions, and as soon as an open spell of weather permitted, I began work with the bees. Opening the first hive, one I had marked "extra prime" in April, I found its colony (imagine my surprise) sadly depopulated, at least in comparison to what I had expected. Thinking that some mishap had befallen this one, I opened the next, also marked "extra prime" and found it in the same condition—and the rest of the yard not much different. Everything that had been marked

drawing shows what I found—a genuine case of spring dwindling, caused by complete failure of young bees hatching to take the places of the dead and dying generation. All the combs were practically broodless.

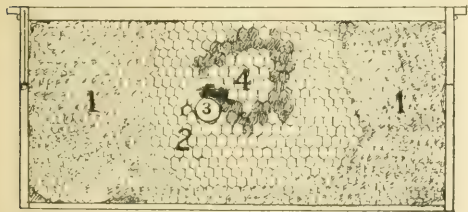
Mr. Doolittle's theory of "plenty of stores" is all right, if the conditions of the season are favorable. If the bees can fly, gather water and pollen, perhaps bring in a little new honey and otherwise make themselves useful to advance home affairs in general, then with plenty of honey in the hive, the queen is induced to fulfill her maternal duties of stocking up her hive with brood. But with such a season as we had that spring (1916), when from the middle of April until late in June, cold rainy weather prevailed during which time bees for weeks could not leave their hives, all the old honey they might have had would not have induced the queen to lay. My customary practice of reducing all my colonies to as few combs as they can well cover and filling the vacancies with division boards, gave me an immense lot of capped honey, all more or less granulated. From almost every hive I took from two to four combs, and when I had them all gathered up one-half of my honey-house floor was literally covered with such combs set on end. If I had left them in the hives, they would not have been touched by the bees for brood-rearing, and all the space they occupied would have been lost to the queen's use, and would only have been a strong incentive to swarming.

But I uncapped them—two, three and four at a time—and hung them under a little outdoor shed for the bees to work on them. As fast as the bees cleaned these combs out I inserted them in the center of the brood-nest of such colonies as could use them to advantage. This manipulation I kept up during the two months when no honey was coming in from natural sources, and by the time the sweet-clover flow began, about the middle of July, all that old honey was transformed into bees and brood.

It makes all the difference imaginable, whether a colony is clogged up with old honey in the hive or whether that same honey is brought in from outdoors. During a honey-dearth bees are as eager to carry it home as they are to gather nectar from natural sources, and the effect in regard to encouragement of egg production is nearly the same.

When the sweet clover flow came the bees were then in exactly the same condition as they are under normal conditions at the beginning of the white clover flow. They had entirely outgrown the effects of the previous spring dwindling; their hives were full of young, energetic workers, and their combs were covered from side to side with brood of all stages, leaving little chance to store incoming honey in the brood chamber. Altho the honey-flow from sweet clover is never so profuse as the earlier white clover flow, the colonies were, as a consequence of close management, in the very best condition for super-work.

G. C. Greiner.



1, is sealed honey; 2, empty cells; 3, sealed brood; 4, cells from which brood has hatched.

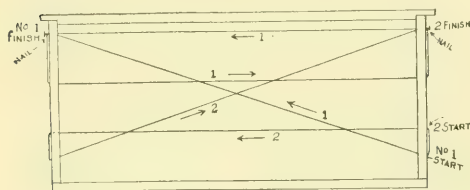
prime was hardly medium; all the mediums were weak; and all the weak mere remnants and small ones at that. This was a puzzle; I had never experienced anything like it before. To ascertain, if possible, the cause of this strange phenomenon, I examined quite a number of broodecombs. The accompanying

THE average beekeeper can increase his production of honey by giving more attention to the combs in his hives. To give the bees only starters in the frames is but little better than the old box-hive methods. Combs built from starters will contain an excess of drone comb, and an over-abundance of drone brood in the hive in the spring, when workers should be hatching, is a decided disadvantage. It costs the bees more in time and feed to rear drones than it does to rear workers, and, if many of them are reared, when the honey flow comes there is likely to be a lack of workers.

To use full sheets of foundation without supporting wires is a waste of time and material, as the foundation will usually sag with the weight and heat of the bees, so that but few cells will be suitable for worker brood. With the use of wire, properly put in, the foundation will be supported so that nearly every cell in a comb of the standard Langstroth frame will be perfect for the worker brood.

I have tried a variety of methods of wiring, and for a number of years have used one that has given satisfactory results, and I believe it will be a help to others. I use the standard Langstroth frame of the all-wood pattern, with the $\frac{3}{8}$ -in. top-bar, and do not have any sagging of top-bars, because a portion of the weight is supported on the end-bars of the frames by my method of wiring. The plain, old-style Langstroth frames are more easily manipulated in all parts of the work, especially in extracting. But this method of wiring can be used with any pattern of frame that has four holes pierced in the end bar.

The first step in wiring is to drive in a $\frac{1}{4}$ -in. tack half its length in each end-bar, near the top hole. The frame is placed in a



THE SOUTHWORTH METHOD OF WIRING.

Two strands of wires are used. The first starts at the lower right hand corner, and follows the arrows. The second strand starts at the hole above the first start, and follows the arrows.

holder that keeps it rigid and square, with the top-bar up. The spool of wire is placed at a convenient distance to the right of the frame holder. (A brake, or drag, should be adjusted to the spool to prevent the wire from unwinding too freely.) Pass the wire

THE ELIMINATION OF DRONES

*How They May be Excluded by Wiring;
by the Location of the Entrance;
and by Using a Bottom Starter*

By W. P. Southworth and E. R. Root

hole; across to the right-hand, second hole; up thru the right-hand upperhole; across thru left hand upper hole; wind around the tack; and secure by driving the tack home; first tightening the wire so that it is not slack. Measure off a length of wire that will reach from the right-hand, lower hole, across the frame and diagonally back to the right-hand, upper hole. (It is best to cut the wire off a few inches too long until you are accustomed to estimating the correct length required.) Thread the end thru the second right-hand hole from the bottom; pass across thru the second left-hand hole, down to the lower left-hand hole, and diagonally thru the upper right-hand hole; tighten all of the wires so that none of them are slack; wind the end around the tack, and secure as before; cut off the short piece of wire that is left over.

When finished, you have three wires running parallel with the top-bar, and two running diagonally, thus forming an X in the frame. This arrangement of wires gives the support to the new comb where it is most needed—that is, at the top and at the ends where the greatest weight of honey is stored the first season, as a rule.

To get the best results, all foundation should be drawn out in the brood-nest between even combs. If this is not possible, good results can be obtained between drawn combs in the surplus chambers. It is well to avoid having heavy swarms on foundation in warm weather, as the foundation is liable to sag from the bees' weight and heat, even with the method of wiring here described. Good combs are the best property a beekeeper has, and are worth all the care he can give to make them perfect.

Sioux City, Ia.

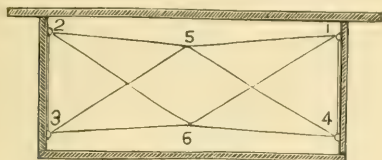
W. P. Southworth.

[When we were in Sioux City last summer, Mr. Southworth's associate, Mr. Brown, showed us this method of wiring, which they were using in their apiary. They liked it very much and found that it dispensed with the stretching of the foundation. The plan is very similar to the Keeney method of wiring that was exploited in *Gleanings in Bee Culture* in 1890, 1891 and 1892. At first, we were very enthusiastic about it, believing it would solve our trouble of stretching of the foundation. It was all right when used in connection with "heavy" brood and "medium" brood foundation, both of which weights have nearly disappeared from the market, on account of the expense; but when the ordinary "light" brood, which is now being used almost universally, was employed, we found there was a tendency of the foun-

thru the right-hand, lower hole, as the frame stands before you; from there, diagonally across the frame to the left-hand, upper hole; down to the left-hand, second

dation between the diagonal intersections to bulge, making the combs wavy or uneven. Shortly afterward the electrical method of heating wires to embed the foundation came into use. This fact, together with the almost universal use of light brood foundation, which bulged between the wires, led us to abandon the method.

While the Keeney plan is slightly different from the one here described, the essential



THE KEENEY METHOD OF WIRING.

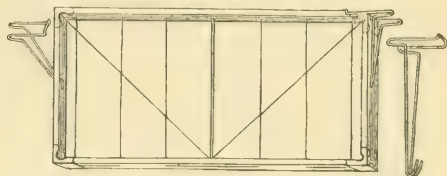
This method was illustrated in *Gleanings* for 1890, 1891, and 1892. It was abandoned because it caused bulging of the foundation in between the wire intersections.

points are the same. There have been other plans of intersecting wires, but they have not proved to be very popular with the general beekeeping public. It is possible that the general scheme was abandoned prematurely, for, with the present methods of wiring, there is a slight stretch or sag, either in the foundation while drawing out or after the completed combs have been filled with honey. The sagging or stretching occurs at the top of the comb, and most generally after combs are filled with honey the first time.

There is no particular objection to this sagging except that it has a tendency to encourage the raising of useless drones, and in this day and age, when energy must be conserved, it would be important for us to consider any plan carefully and impartially that will eliminate the building of drone comb.

For discussion of the Keeney plan of wiring in the back volumes of *Gleanings*, see page 371 of 1890; 563 of 1891 and 233 of 1892. The last-mentioned page tells of the failures of the Keeney plan of wiring and refers particularly to the bulging trouble already explained.

There is another method of preventing foundation from sagging, and less objectionable than the diagonal intersecting-wire plan. This is the horizontal plan generally in use, but with one or two more horizontal wires near the top-bar. The first two wires should be about 1 inch apart; the next wire $1\frac{1}{2}$ inch further away; the next one, 2 inches; and so on, making the distance increasingly further apart toward the bottom. This will eliminate the sagging but requires more wire and extra work.

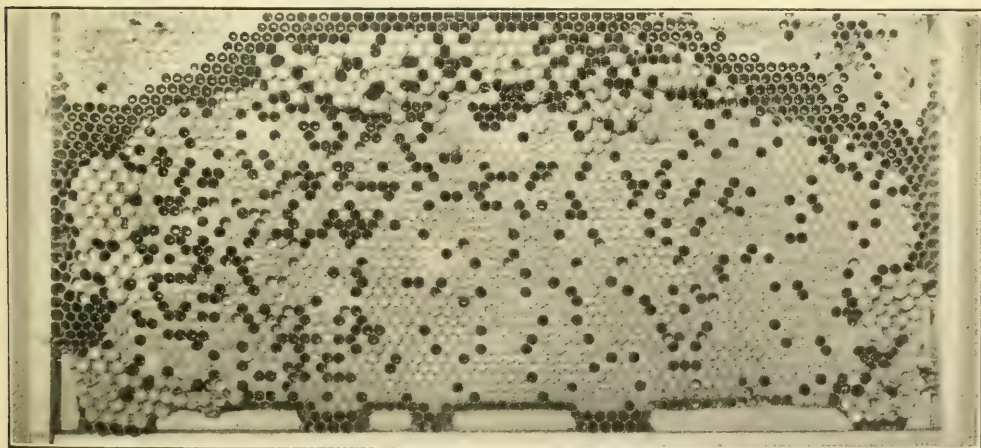


Another plan is to use vertical and diagonal wiring, as was used by A. I. Root in the early 80's. The attached cut shows a reversible frame that he used in 1885-'6, but the objections to this plan were the large amount of work involved in stringing the wires, and the difficulty of stringing wires thru thick top-bars so generally in use.

There is another cause for the building of drone comb and that is the position of the entrance.—Editor.]

The Elimination of Drone Comb by the Location of the Entrance.

In our March issue we mentioned having visited Allen Latham at Norwichtown, Conn.



FRAME OF BROOD SHOWING DRONE BROOD AT THE CORNERS.

Arthur C. Miller says that the drone brood found so often in the corners of Langstroth frames is caused by the position of the entrance in the end of the Langstroth hive.

At that time we also visited Arthur C. Miller of Providence, R. I. Among other interesting points of discussion that came up was the question of the elimination of drone comb. We mentioned that, notwithstanding that we were using at our apiaries full sheets of foundation, there was considerable drone comb in the corners of the brood-frames. Why this was there we were unable to explain. Mr. Miller immediately said that he thought he could offer a solution.

"You know," he said, "I have always been an advocate of side entrances rather than at the end of the hives. There are more reasons than one in favor of this position. There is better ventilation, because the remotest parts of the hive are nearer the outdoors. But most important of all, the side entrance eliminates the building of drone comb when full sheets of foundation are used. When the entrance is placed at the ends of the frames, as in the standard Langstroth hive, the bees cut away the comb in the fall at the corners of the combs next to the entrance. The next spring they fill in this space with new combs, and, of course, it is drone comb.

"By the law of chance, these same frames will be put into the hive again in a reversed position. The result is, that both ends of the frames near the bottom corners may have drone comb. By my plan of side entrance, I put a frame of drawn comb next to the entrance and then I can rest assured that all the other combs will remain worker, because they are back from the entrance and screened by the comb in front. In the breeding season the next spring I remove the drone comb and put in the worker. When my frames are properly wired I have all worker combs.

"Do not take my word for it, but try it out yourself. In the fall, just notice how the bees cut away the corners of the combs next to the entrance; then next spring see how they build it out again with drone comb."

During several seasons we have noticed more or less drone comb in all of our frames at the corners, as shown by the accompanying picture and during the height of the honey flow we will be raising nearly 2 per cent of drone brood. This is not only an unnecessary waste of time and energy on the part of the bees, but the rearing of drones cuts down the actual honey crop. They are a nuisance when an upper story is put above perforated zinc, because the drones in their effort to get out of the hive, will clog the zinc or the excluder and interfere with the ventilation of the super.

What Mr. Miller said interested us very much at the time. On arriving home we laid the matter before Mr. Pritchard, our queen breeder, who is a very close observer of things that occur inside of a beehive, and this is what he writes:

I entirely agree with Mr. Miller in having the entrance at the side of the frames, with a drone frame next the entrance; but I have not observed that the drone cells are built near the entrance more

than at other places. Drone cells are built at the lower corners of the frames because it is the last part of the frame drawn, and queens usually do not lay drone eggs until the brood-nest gets crowded. However, I intend making careful observations to determine whether or not Mr. Miller's idea is correct.

M. E. Pritchard.

We also submitted the matter to Chalon Fowls, our neighbor over at Oberlin. Mr. Fowls is a beekeeper of long experience and likewise a close observer. Mr. Fowls writes:

Isn't that A. C. Miller the most provoking chap, always thinking up something to upset one's plans? Here I was thinking that as we had 500 or 600 combs drawn out from foundation in upper stories this season, I could use them next year in the brood chambers in making new brood nests in our method of swarm control. Then we could put on new frames of foundation, to be drawn out as before.

These new combs are all worker and straight as a board, their only fault being that open space along the bottom-bar. I had also thought of a plan for next year, to get worker comb built solid down to the bottom-bar, simply by putting in a bottom-starter of heavy brood-foundation, perhaps having a groove cut in the center of the bottom-bar to receive the foundation. And now that troublesome Miller comes along and says that the bees will cut out the corners from *drawn comb* if near the entrance—and I'm awfully afraid he's right. And, if he is, then the problem is not solved by bottom starters, and it would not be easy to make side entrances to chaff hives, especially to those with tight bottoms.

I had frequently noticed new combs rounded at the corners, and when patching them had noticed that one end would often be rounded more than the other; but I gave the matter little attention, being simple enough to think the bees had only cut out the foundation at corner, never once thinking of their cutting out the finished comb like that. Well, if this new wrinkle, to have the entrance on the side, comes to be a fad, what is to be done with the other Miller (Dr. C. C.), who often raises his hives on four blocks or bricks? Shouldn't think he'd have any combs left at all, or only a fringe of drone comb all around.

You know how natural combs are often built, when nothing but narrow starters are used—worker first, then drone comb for storing honey beyond the circle used by the queen. Well, I have just been out and examined a set of 10 combs that we bought this summer and which it is probable had never been removed from the hive at all. They were natural combs, or, at least, had no more than starters to begin with. There was some worker comb in the center, with perhaps a third drone comb at the ends, while some were all worker comb; but every one of the 10 combs was built with a space at the lower front corner. Of course, this is no evidence that *combs* would be cut out near the entrance, after having been built, but it does set us to wondering.

Oberlin, O.

Chalon Fowls.

The matter is before you, brother beekeepers. The elimination of drones and drone brood, if it can be accomplished in the manner that Mr. Miller states, would mean thousands upon thousands of dollars to the beekeepers of the country. It is our intention to try out the experiment, and we suggest that those interested, especially extracted-honey producers who are annoyed by the drone nuisance, try it out and report next season what they have learned.

E. R. Root.

FROM THE FIELD OF EXPERIENCE

AT VERY LITTLE COST

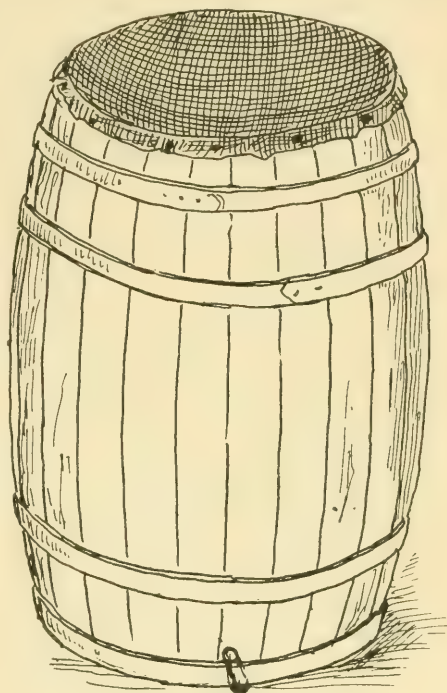
A Wisconsin Beekeeper Tells How He Provided an Extracting Equipment

In this era of extraordinary conditions forced upon us for universal safety, it behooves every one to produce and save to the utmost of his ability. In this endeavor the beekeeper is on the firing line and taking a leading part to help down the hydra-headed monster that would dominate the world.

With prices of honey high and soaring and the market getting bare, it is safe to predict that honey values the coming season will reach an altitude above anything ever known in history. Especially may this be expected for extracted honey. With this prospect of advanced prices in this division, many changes from comb to extracted will be made this season. For the benefit of the small and medium producer contemplating such a move, but hesitating on account of the expense the change would entail, I offer the following plan of a cheap and effective home-made equipment, that I devised and used the past season to my complete satisfaction.

Briefly stated, my equipment consists main-

ly of three sugar barrels and an extractor. I selected good sound barrels and paraffined the lower half of each thoroly, having pre-

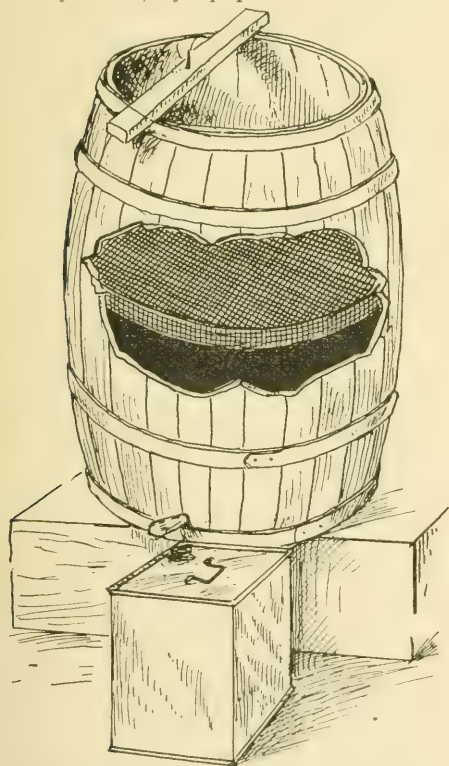


COLIEN'S HONEY STRAINER.

viously bored a $\frac{3}{4}$ -inch hole just above the bottom of each one and fitted with suitable plugs to hold or draw off the contents. Two of these barrels I fitted with wire screen tacked inside just below the center of each to hold and catch the cappings. One of these I arranged for an uncapping tank by nailing a 2-inch strip of lumber across the top at about one-third the distance from one side. This strip was provided with a sharp pointed nail to project upward about an inch to receive and hold the frame while uncapping. The third barrel I arranged with wire screen sunk in at the top and tacked all around to serve as a strainer and receiving tank. This barrel I set up on a platform just high enough to allow the placing of a 60-pound honey-can underneath for filling. To fill, I put the opening right under the hole in the barrel and loosen and draw the plug gently upwards along the barrel and the honey flows nicely into the can without a drop of waste. The honey being thick, there is no spurt from the hole but an even flow straight down into the can. The work is of such a simple nature that any one can do it, and, aside from an extractor, such an equipment costs less than a dollar for material.

Manama, Wis.

E. E. Colien.



Colien's home-made uncapping-can, which is an ordinary sugar barrel waxed on the inside up to the screen. The cappings fall on the screen and the honey drains thru into the lower part where it is drawn off into square cans.

FROM THE FIELD OF EXPERIENCE

BIG BEEKEEPER'S BIG IDEA

Promises Big Profits by Forcing the Bees to Move Stores to the Brood

If I could step into your yard and in five minutes explain and demonstrate how to put \$10, \$100 or \$1,000 into your pocketbook every year, you might be interested. Aside from the actual visit to your yard, I can do that very thing. Here it is: \$10, \$100 or \$1,000 free, to those who are prepared with an open mind. No joke, no hoax, for I know exactly the value of the plan, the economy of labor, the results in booming colonies to gather honey—booming colonies to gather honey, the most important, oft-neglected, factor in all beekeeping.

In spring, or all winter, every good colony must be in a two-story hive, with brood-nest above, super below. When breeding has made a good start in several frames, take all combs containing honey and no brood from the brood-nest and put them below in the lower story; contract the entrance, and fill in the vacant space in the upper story with the very best empty all-worker combs which you own. That's all, except that in unusually bad weather, you can set off the upper story, scratch the cappings on a comb of sealed honey, and replace, without disturbing the actual brood-nest. Seldom necessary.

By this plan you so place the honey that the instinct of the bees demands its removal to empty cells near the brood, and, at all times when the temperature allows, that's what the bees are doing. This increased "handling" of stores means greater activity, more brood-rearing and strong colonies early as a result of this activity.

Another point: you have provided the queen and bees with a great amount of comb-room, **all in one story**, where the increase of brood will not be hampered with any considerable amount of sealed stores near the brood. And not so soon will it be necessary for the bees to rear brood in another story, always wasteful in early spring, as there is so much space to heat, containing no comb—only bottom-bars, bee-spaces and heavy top-bars.

The principle, however applied, is simply this: for big colonies, early, put the combs of honey at a distance from the brood, preferably near the entrance, and the bees are kept constantly active, moving the honey nearer to the brood.

Less labor, big colonies, added income for you.

E. F. Atwater.

Meridian, Ida., Nov. 1, 1917.

[We asked R. F. Holtermann of Brantford, Ont., who chanced to be at our office when Mr. Atwater's exceedingly interesting and enthusiastic article came to hand, to comment on the plan. This he consented to do, writing as below. Our readers may be in-

terested to know that Mr. Atwater is a special field agent of the U. S. Dep't of Agriculture, selected by Dr. E. F. Phillips for apicultural work in California, Arizona and New Mexico.—Editor.]

The article by Mr. Atwater brings forward an excellent idea, viz: That to get the bees to move uncapped honey in the hive will stimulate brood-rearing. To be able to bruise honey in combs in the lower story is also a method which would have a decided advantage over breaking the cappings on honey actually in the brood-chamber occupied by the bees. I am afraid that many beekeepers are not prepared to accept the statement that the colony should be in possession of two brood-chambers at all times. This might be true—is true, if an eight-frame hive is used—but I would not be prepared to accept the statement when using a 10- or 12-frame hive. I would not accept it. Then in many localities, including my own, at the time when colonies require stimulating I rarely have enough honey in the brood-chamber to make it worth while having a brood-chamber under the one occupied by the bees—that is the time when bees have the least honey.

R. F. Holtermann.



HER LAST YEAR'S CROP

A Michigan Woman Succeeded with Queenless Colonies in a Poor Year

Last May I explained thru the pages of Gleanings how I obtain good crops of honey by making each colony queenless as soon as the bees are well started in the second super, nine days later destroying queen cells, giving a comb of young larvae, and at the end of nine more days destroying all queen cells but one. Doubtless some beekeepers are wondering how much of a crop my queenless bees succeeded in gathering during the poor season of 1917.

In the spring I found 160 of my 170 colonies were still alive, but several of the small colonies did not build up in time for the summer flow, on account of my being gone from home three weeks just when they most needed help. The spring was very backward, which was hard on all the apiaries, but good weather in fruit bloom did wonders, so that most of the colonies were ready for the flow at the usual time. In ordinary seasons, the supers on nearly all of the colonies are heavy with partly capped honey by July 4. This year it was quite different, there being very little surplus on even the best colonies, while many had not begun storing at all. I was obliged to keep the colonies strong and ready, waiting for the flow that proved to be three weeks later than usual. During the entire season there were only a few good days that the bees were able to gather honey, and the

FROM THE FIELD OF EXPERIENCE

farmers had so plowed up their land for cultivating crops that I could not help wondering where the honey could possibly come from. There is a little basswood, a few red raspberries, and here and there a buckwheat field, all of which yielded very little last year. There was also an abundance of fall flowers that generally yield more or less.

When the time and conditions came right, I dequeened my colonies as usual and had them requeened again, with everything in the best condition for the fall flow that failed to materialize. I had increased 15 colonies in each of my apiaries and had hundreds of partly filled combs of early honey on all of my increase and weak colonies. Instead of getting these combs filled in the fall for extracting, as I could have done in any ordinary season, they were nearly empty on account of excessive brood rearing. By careful manipulation I was able to winter 150 colonies in all. These were supplied with sufficient stores so that it was not necessary to feed them.

My 1917 crop brought me \$1,100, the colonies run for section honey averaging 50 pounds per colony. I had a large amount of light weight and unfinished honey this year that I sold to the home trade. Nearly \$300 worth of this honey was sold from my home in the country, nine miles from a railroad station. It brings me nearly as much in case lots as I get for the best honey. I seldom sell less than a 12-section case or a 10-pound pail to a customer, and it is my policy to discourage the sale of smaller packages.

Sand Lake, Mich. Mrs. S. Wilbur Frey.

THAT LET-ALONE HIVE IDEA

Even Mr. Latham Would Not Recommend It as Practical

In the March number you have an article on "The Let-alone Hive Idea" that I feel ought not to pass unnoticed, or go to the A. B. C. class without protest.

In the first place, you call it "a new plan." But I don't see that it is very much different from what I have seen practiced by the farmer beekeepers for the last 40 years. Nearly all have what I call immovable frames; some have large hives and some have small; but there is a remarkable uniformity about results, which can usually be expressed in one figure, thus: O. If by any chance one of these fellows gets a single super filled with honey in dirty, travel-stained sections, he is delighted, for, of course, it was unexpected as well as undeserved.

By the way while you are illustrating slipshod methods, you ought to take a snap shot of one of these chaps taking off his honey, sweltering in overcoat and mittens, his face tied up with a good warm veil, etc. It would

bring down the house all right, for it's more fun for the spectators than a box of monkeys.

I just had a call a few days ago, from an old friend of mine who is a medical missionary in darkest Africa. He describes the method of the natives which he calls crude. They use cylindrical hives made of bark, with a disc of wood in each end. They get the honey by removing a disc and blowing in smoke, and then cutting out a part of the honey. The disc is then replaced and the bees fill the hive again. Sounds very much like the method of our Connecticut friend.

But there is another point that should not be lost sight of. Any plan that results in a waste of food is unpatriotic at this time. The United States Government is requesting all food producers to speed up production and suggesting that competent beekeepers should buy or otherwise obtain control of any bees in their vicinity that are being neglected. Of course, it goes without saying that bees that are allowed to raise unlimited drones and are only visited once a year are neglected. For my part, I have always tried to encourage good beekeeping and discourage the opposite. Neglected bees not only are of little or no profit to the owner, but they are a constant menace to good beekeeping, as they may become rotten with disease and infect the whole neighborhood.

As to the non-swarming feature, there is no evidence given in your article that would be taken in any court of law to prove that there had been no swarms or might not be in a season when there is swarming from ordinary hives. Anyway, I am willing to go on record as saying that merely to give plenty of vacant space, with no drawn comb or foundation, may delay, but will not prevent, swarming in this part of the country, at least.

In conclusion, I would say to the A. B. C. class: our Editor should not be taken too literally, as he is a very unusual man, as you will see by referring to pages 163-4 in the March number, where one of the department editors gives a word picture of him. Besides, he was in an unusually good humor when he saw Mr. Latham's "let-alone hives," for that man (of the land of wooden nutmegs) had craftily filled him up with slapjacks. Nuff sed. But, as for me—well, I didn't get any of those slapjacks so I just sized him up as "shoost a poor teufel of a schoolmaster dot works for notting and poards around."

Oberlin, O.

Chalon Fowls.

[Mr. Latham himself, on Feb. 12, upon receiving a proof of the article on "The Let-alone Hive Idea," wrote some comment on it that would have appeared as a footnote to the article in question had his letter not arrived too late for publication in the March number. In this letter to the Editor he said: "Yes, you have used some poetic license. In the main, the facts are as you have stated." Then Mr. Latham asked that the following

FROM THE FIELD OF EXPERIENCE

footnote be added to the article: "The innocent subject of the sketch above would probably not be all there and would certainly be driven to the bug-house if he were to be fed daily upon such flattery. He wishes the reader to get out the salt-shake when he reads the article and use it frequently. The let-alone hive has at times done all that Mr. Root says; but those halcyon days are at present under a cloud. When the subject of the sketch had freedom from bee-disease and had a strain of bees which rarely swarmed, he carried on the let-alone style of beekeeping with marked success. When foul-brood came and those non-swarmling bees succumbed at once, and he had to get in other strains to combat the disease, his let-alone hives began to take a back seat."

So, Mr. Latham is fair and square in the whole matter.—Editor.]



CONVERSATIONS with DOOLITTLE

He Answers a Question About the Spring Management of Bees for Best Results

"Will you kindly tell us in Gleanings how to manage our bees in spring so as to secure the best results in honey during the season?"

The beginner in beekeeping is confronted with many perplexing problems, such as wintering, spring management, location, marketing the crop, etc., but of the many problems the most pertinent, perhaps, at this season of the year, is spring management. One of the greatest secrets of successful honey production is that of having a great force of field-workers during the honey harvest. After the harvest has passed and gone, the workers are largely useless consumers. A proper understanding of bee culture and the honey sources of our locality will convince an inquiring mind that the most important object in view, from the time one honey harvest closes until another begins, is the securing of strong colonies at the proper time. Those last three words mean a great deal to the apiarist. Any colony of bees that gets into shape for work only at or near the close of the main nectar flow becomes very largely a consumer instead of a producer. The ideal condition is to have the colonies vigorous and populous at the very beginning of the honey season. But how to get the colonies into the proper condition in time, is the important thing.

If a colony of bees comes out of winter quarters in prime condition and well supplied with honey, they may build up to the required standard without any aid from the apiarist, but many colonies will lack in some essential point. If this is not corrected or

supplied, a partial or entire failure will be the result. Careful attention to their especial needs during the weeks that intervene between the time of their first flight in the spring and the beginning of the honey harvest, is the work which pays the beekeeper. Some colonies may need one thing, and some another. In an apiary of any considerable size some colonies will lose their queen, or have one too poor to keep up brood-rearing sufficient for the best results. Such can be supplied by uniting with weaker colonies having good queens. Some may need more food to rear the large amount of brood necessary for the maximum number of bees just when they are needed to meet the main flow of nectar. This can be supplied by inserting combs of honey carried over from the previous season for this purpose, or from some colony which can spare a frame. All hives should be made as warm as possible by seeing that they are as tight as possible at the top. A good method, where wooden covers are used, is to place four or five thicknesses of newspaper over the top, and then press down the cap or cover over all. This is very effectual in preventing the escape of warm air. Later, when brood-rearing has been in progress for some time and some colonies are strong, a frame of brood nearly ready to emerge may occasionally be taken from a strong one that can spare it and given to a weaker one, thus tending to equalize both and bring all in the apiary so that the maximum number of bees may be on hand at the beginning of the main honey flow. A little later on, the two combs on the outside of the cluster, containing only a few eggs, may be taken and placed in the center of each colony and two well filled ones from the center put in their places, which manipulation will increase the egg laying of the queens and help to bring about the condition we are working for, namely, all combs filled with brood and eggs at the beginning of the honey harvest. Then there is another item well worth looking after in an occasional year: if the colony has too much honey, or, if early honey comes in so rapidly as to cause the combs to be filled before the queen occupies them with eggs, this honey must be removed or the colony will be weakened thru the restriction of brood rearing. This honey can generally be used to supply colonies that are short and need more honey than they have to put them in as prosperous condition as are most of the others.

The story goes that a noted pugilist upon being asked for the secret of his success, replied, "When I see a head, I hit it." The ability to go straight to the important element of one's business, and then to strike the proper blow, is certainly one of the secrets of success.

Borodino, N. Y.

G. M. Doolittle.

I SENT a five-pound pail of honey by parcel post to Chicago (66 miles) with no sort of packing whatever outside the pail. I wrote the address on the label, which had plenty of white space on it for that purpose, as the label went clear around the pail. I asked for a critical report of its condition upon arrival. I received the following: "Well, sir, that honey reached this house with no more dents made in it outside or inside than when it left your hands. But, oh, the dents that have been made on the inside of it since! Yum, yum! . . . The pail hadn't leaked the least bit. If you had gone to your store for it, taken the pail down and handed it to me, it couldn't have been in any better condition than it was when the mail-carrier handed it in at the door."

A Minnesota correspondent writes in substance: "In January Gleanings, page 29, you advise to get pound-packages from the South about the time we put supers on brood-chambers. Our crop is all from clover, and so I thought of getting packages as soon as natural pollen was at hand, to help colonies build up before June. So I ask whether your advice was intended for our clover-region, too, or only for localities where a fall crop is expected." Clover localities were included. Mr. Wing had advised waiting till bees had started whitening combs along top-bars. I raised the question whether two weeks earlier might not be better. It would be still better to have the packages as you propose, as soon as natural pollen appears, only, as Mr. Wing points out, the difficulty of getting and shipping so early is too great. Adding bees at the time of putting on supers would help somewhat on the crop; but two weeks earlier, would help a great deal more.

Ye Editor having said that beeswax painted on foundation would prevent sagging, but "beeswax is expensive; and if we can prevent sagging by any scheme of wiring we are that much ahead," I replied, February, page 89, "Vertical wiring will do the trick." Now comes Arthur C. Miller, and says: "Yes, wax is expensive, but not so expensive as foundation, and by using the wax-paint plan I use foundation running 12 L. sheets to the pound—practically super foundation—and you cannot use that with wires or splints. And it takes very little wax, less than two pounds for 100 sheets. One may, if one chooses, add the wax to equal the weight of the foundation, but it is not my pleasure. Incidentally, labor cost is less with wax." I don't happen to have any reply on hand, unless to say that one must be an artist to paint, but I'm afraid he wouldn't be satisfied with that, so I turn him over to your ten-

STRAY STRAWS

Dr. C. C. Miller

der mercies, Mr. Editor. [In any case wiring would be necessary if extracted honey were to be produced. We would always wire, no matter what grade of

foundation we used. It is possible that a "super" foundation can be used in the brood-nest by painting the surface with melted wax; but we would wire it first—Editor.]

"The best food of all is frames of natural sealed stores," page 140. Good. You can hardly say that too often. Then right after it, "Whether a comb of natural stores or a cake of candy is given, the feed should be put on top." Ye-es, of course, when it's out of doors, but you mustn't forget that bees are sometimes in cellar, and when you want to feed a colony at the bottom of a pile, with another pile close at each side, it's not entirely convenient to feed on top. Ever so much easier to slip a comb of sealed honey—or even a cake of candy—under the bottom-bars. "Not room enough"? Oh, well, make your bottom-boards like mine, two inches deep, and there will be plenty of room.

The frantic call for sugar for spring-feeding from so many quarters is not complimentary to the foresight of beekeepers. Uncle Sam is all right to help out, but the help should be accompanied with the caution: "Don't let it happen again." Some say: "So long as a pound of honey brings more than a pound of sugar, it's economy to take away all the honey and feed back sugar." I don't believe it. For some reason, when one feeds sugar there seems to be a sort of "overhead" loss about it. Even if there were no such loss, and if honey were ever so much higher than sugar, sugar is utterly lacking in some of the constituents of honey that are essential. Feed bees on sugar alone for a sufficient length of time, even with the addition of pollen, and its my belief they'll die of anemia. Right here and now is a good time for every young fellow who aspires to be an up-to-date beekeeper to decide: "The bees have the first claim on the honey they gather, and I'll not take a pound of surplus until after I'm sure there will be enough for both of us without compelling them to eat sugar. If the hives are not big enough to hold a store to last until next honey comes, I'll save extra combs of honey to give in the spring, using fall honey if I can count on a fall flow; but, if not, then they must have theirs out of the earlier honey. Anyway, I'll not be caught feeding sugar."

Staney Puerden, when I read, page 91, February, that vitamins were in honey, it gave me a delightful thrill. But why didn't

you say it in capitals—THERE ARE VITAMINES IN HONEY—just like that? As you say, vitamins are a recent discovery, and some people wouldn't know a vitamin if they met one in the woods. So I'm waiting anxiously for you to fulfill your promise to tell us more about them. I suppose they're the little fairy folk in butter that make the doctors advise us to give butter to growing children in spite of the higher price as compared with any butter-substitutes without vitamins. And if they add 10 cents or more to the value of butter, why shouldn't they do the same thing for honey? Or isn't honey as rich in vitamins as butter? Isn't it lack of vitamins, too, that makes people sick with scurvy or something when they eat food without vitamins? Now we have another thing to score in favor of honey. And at least three things we should make known from the housetops: That honey is ready for direct assimilation, not putting the burden of inversion upon the digestive organs as does sugar; that it contains minerals, in small quantities, to be sure, but absolutely essential to health; and that it contains vitamins, those things to be found only in the latest dictionaries, that have a mysterious influence upon digestion without themselves being subjects for digestion. And yet I've known people to say honey is possibly better than sugar. "Possibly?" The idea!

"Even in northern states, brood-rearing may start as early as January, if the bees are disturbed in any way, or if a few warm days occur," page 172. Don't you believe that in the north brood-rearing in January is more common than generally supposed, and don't you believe that it's the rule rather than the exception for it to begin in February? You know that brood-rearing begins sooner outdoors than in cellar, and we are told that it's because the severe cold outdoors makes the bees run up the heat in the center of the cluster to the breeding point. But then it might be argued from that that the farther we go north the earlier brood-rearing begins, and that would hardly do. Besides, we know that in the fall there is no brood-rearing caused by warm days. What do we know about bees anyway? [In talking with R. F. Holtermann, yesterday, he said that it was very seldom that any brood would be found in his outdoor wintered colonies in the months of January or February. We have found it repeatedly in both months. Perhaps if the colonies were adequately packed, so it would not be necessary for them to generate extra heat, breeding would not start so early. Mr. Holtermann believes in ample packing as does also Dr. E. F. Phillips of the Bureau of Entomology. In that case, breeding probably would not start much before the first of March.—Editor.]

It is a matter of much importance to know whether, in the treatment of European foul brood, it is better to keep the colony with-

out egg-laying longer than 10 days. J. E. Crane, page 154, thinks it is sometimes better, because in some cases of European foul brood "the larvæ die in all stages of growth, from two or three days old to those that have their growth and are even sealed over—being changed into a sticky, stringy substance," and he thinks three weeks or even four none too long a time for the colony to clean up. But, friend Crane, if I am correct in my view, it isn't necessary for the colony to clean up before egg-laying is resumed. After my first experience I always allowed egg-laying to begin while there were plenty of dead infected larvæ in the hive, and I don't think an old black larva carries the disease. It's the yellow fellow, not yet putrid, that the bees eat. I think, too, that in all cases there were sealed cells containing diseased larvæ, and I've always supposed that you would find these in all cases, if you looked for them. The sealing looks all right, but dig in and you'll find the dead larvæ. It is possible, however, that there may be such a thing as cases that need three or four weeks without egg-laying in order to be safe. But I think such cases must be decidedly exceptional, and I would advise that in any case the 10-day treatment be tried before proceeding to so drastic a measure as to have no egg-laying for 30 days. [We gathered the impression from Dr. Phillips that he was of the opinion that the period of queenlessness might vary according to the conditions; that those conditions might have to be determined by each beekeeper himself. In the case of some beginners, perhaps, the Alexander limit would be none to much.—Editor.]

"There is no easier, quicker, and safer way of feeding bees that are short of stores than to give them sealed stores of honey." That's the ripe advice given by one A. I. Root, page 178, and he might have added "better" to the "easier, quicker, and safer." Look it up, young fellow, and see what more he says.

J. E. Crane speaks of the difficulty of getting a stand of sweet clover altho "it seems to grow well along the roadsides," page 154. In this region you can get just as good a stand in the fields if you pack down the ground over the seed. In soft ground it fails.

After you get your pound-packages of bees in place in the hive, "they should be fed two or three pounds of thin sugar syrup until they are well supplied," page 142. If you don't happen to have the sugar, a comb of honey will do quite as well.

"In this locality" the winter of 1917-18 will go down in history as "the cold winter." Makes no difference to my bees.

That picture on the front cover, March. Isn't it a beauty? I've looked at it again and again, and every time it looks prettier.

BEES appear to have wintered pretty well up to this time, March 1. They had a nice flight Feb. 25 for the first time in three and a half months.

I notice a good deal of speculation these days as to how long present prices for honey will continue. After the Civil war the high prices for honey continued for some 18 or 20 years. Of course, a good deal more honey is consumed now than then. But it seems probable that the high prices then were caused by the greater supply of money in circulation. Almost all commodities have gone up and especially foods. Even the boy that gathered dandelion greens for the local hotel wanted twice as much as usual. When asked as to why, he replied that it was owing to the war.

Dr. Miller, March Gleanings, page 153, calls for some word that will take the place of "extracted" in describing liquid or pure honey. I have sometimes used liquid or pure honey to those who I thought would not understand if I used the word "extracted." But the Doctor objects to liquid because honey will not always stay liquid. Well, water surely is a liquid but does not always stay liquid as many of us in this part of the world have found out in the past winter to our sorrow. I have sometimes wondered if it were not better to use the words "strained honey," as most consumers would know at once that it was honey separated from the comb. After all, is there as much difference as we beekeepers have tried to make ourselves believe. Strained honey is honey separated from the comb by drawing it thru a coarse cloth or finer wire cloth by the force of gravity; while our extracted honey is separated from the comb by a coarse wire cloth or screen by means of centrifugal force, frequently carrying so many particles of wax with it that it is found desirable to run it thru another finer strainer before it is fit for market. If I remember correctly, the word "extracted" was rather forced at first by beekeepers so as to give the impression that the product was much superior to the old strained honey that our mothers used to render 75 years ago. I strain all extracted honey thru cloth before bottling.

That is a most enjoyable beekeepers' convention on pages 169 and 170 under the title of "Bees, Men and Things." More than 40 present from all over the country, and British Columbia and even Cuba and far-away Africa and Australia and Europe, too. No long-winded speeches here. No one "talked and talked and didn't say nothing," as the little girl said, but every one gives their experience in the briefest way—and what a difference. One says his bees have not flown

SIFTINGS

J. E. Crane

for two and a half months, while another says his bees have been getting nectar all winter. Some report bees as starving, while another says he

has extracted 30,000 pounds since November. One reports his bees under two and a half feet of snow, while somewhere else bees are swarming. One reports a very severe winter, while another says it is the mildest they have ever had—and so it goes. Let no reader of Gleanings in Bee Culture skip these pages. You can take a trip all over these United States and the whole round earth, almost, and know conditions existing among beekeepers while you sit comfortably in your arm chair reading Gleanings in Bee Culture. Give us more, Mr. Editor. [Thank you. We will give you more, if THEY gives it to us.—Editor.]

Our friend, Virgil Weaver, page 150, gives advice about sowing sweet clover. He says: "Sow the railroad's right-of-way; sow the highways; sow the byways; sow the vacant lots; sow the farmers' fertile fields; sow the barren spots; sow the cliffs; sow 10 pounds of white and 10 pounds of yellow for each colony." Now it seems to me this sort of advice will bear a little good-natured criticism. I am interested in increasing the yield of honey by all legitimate means, but when it comes to sowing seed upon other people's property, I draw the line. Honey is good, but there are some things of more value than honey or money. I have yet to see that any one has any moral right to enter the railroads' right-of-way or the farmers' fertile fields to sow sweet clover seed without the consent of the lawful owners; nor yet to sow seed along the highways beside land whose owners object to it. Would we like to have any one enter our fields and sow seed we did not want, or sow along the roadside close by? "Thou shalt love thy neighbor as thyself," is still binding. To get what we want, by hook or crook or without regard to the rights of others, is the law of the Hun. Again he says sow 10 pounds of white and 10 pounds of yellow sweet clover for each colony. This would require about 20,000 pounds to supply us, or \$4,000 worth of seed. No, thank you. I would much prefer to furnish my farmer neighbors with Alsike clover seed for nothing and let them do the sowing, and enjoy their smiling faces and good wishes for a prosperous season for the beekeeper.

Dr. Miller rather recommends the use of sections with drawn combs, believing the larger amount of honey secured will more than make up the difference in price for which it will sell. I think he is right. We shall use several thousand drawn combs in sections this year. See page 152.

WE have heard so much of late about keeping up the morale of the fighting men. It seems almost incredible to us here in America that the Allied armies could ever admit defeat; but the Food Administration tells us that, if we once let the fighting men at the front fear that the women and children behind them are starving, the war would soon be over. If we should stop our exports tomorrow, in only a few weeks we would find we were alone in our war against Germany. It needs no vivid imagination to picture what would happen to us if Germany became the victor. If we do not want to risk a repetition of the horrors of Belgium, Poland or the invaded portions of France, in our own loved country, we must keep up the morale of the fighting men with American food.

We have already exported more than our normal surplus, and the only way we can keep up the exports is to save from our normal consumption. And our country cannot do it without the co-operation of her 20,000,000 housekeepers. Doesn't it give you a thrill to think that we women have it in our power to help keep up the morale of all the Allied fighting men?

1918 War Gardens.

When you pass one of those recruiting posters picturing Uncle Sam looking straight at you with an accusing look, how does it make you feel? I know. It makes you feel that he wants you for some service, even if age or sex prevents you from fighting in the trenches. In my case it makes me feel like this. If our soldiers can offer themselves to their country to leave home and all that is dear to them to engage in the horrible work of trying to kill their fellow men, surely I can work hard in a pleasant home to conserve the food supply, and work hard in a peaceful garden to increase the food supply.

Vitamines.

Perhaps there has never been a time when housekeepers needed to study food values so carefully in order to feed their families wisely. For this reason I wish to talk a little more about vitamins, as I promised in a recent issue. In the first place, don't ask me to pronounce the word. Until some dictionary lists it you need not fear being called down for mispronunciation.

Very little is known about these interesting little vitamins altho it is certain they are not living organisms. But their function has been well established. To quote Dr. Wiley: "No matter how well foods are combined to secure a nutrition of all the tissues of the body equally, they fail to do this if vitamins are absent." Scientists surmised the existence of vitamins nearly a decade ago, but

OUR FOOD PAGE

Stancy Puerden



it was not until about six years ago that any real work was done on them. One of the chief investigators, Casimir Funk, gave them their name, which is properly

a group name, as there are two well recognized types, and many scientists are inclined to believe there are more than two classes.

Vitamines are abundant in the outer layers of grains, especially rice; also in the yolk of egg, raw milk, fresh fruit, and fresh vegetables, especially peas and beans. Cooking is an important art, but certain foods when cooked lose their vitamins. The fact that they are found near the skin of the grain is one argument against the use of white flour bread, and for the use of brown rice instead of the white polished rice.

The absence of vitamins is probably responsible for certain diseases such as beriberi, scurvy, pellagra, and polyneuritis, as well as much ill health of a less definite sort.

Some raw or uncooked foods, therefore, such as lettuce, tomatoes, celery, fruits, nuts, and milk, should be used in order to supply these minute substances which are destroyed by prolonged high temperature, such as is employed in order to sterilize canned foods. They are also diminished, if not destroyed, by ordinary cooking, except in acid fruits and vegetables. It is true that only clean milk is entirely safe in an absolutely raw state, and that heat is usually needed to kill the germs. But this heat, even at the comparatively low temperature of pasteurization, has been found to destroy the vitamins that prevent scurvy. Orange juice should always be given to infants over one month old who are fed on pasteurized milk.

Vitamines are sensitive to alkalies, even such mild ones as baking soda, especially when accompanied by heat. Do not conclude from this that you should always use baking powder in preference to soda, as all baking powders are made by combining an acid with soda.

Vitamines are present in yeast. A company selling yeast makes the most of this fact in its advertising.

Fowls or guinea pigs fed on a vitamin free diet will become paralyzed in a very short time. Fed on rice polishings they will speedily recover.

Fowls fed on boiled polished rice show signs of beriberi in about 30 days. Similarly they show symptoms similar to pellagra from being fed on cooked cornmeal. But cornmeal corrects the beriberi symptoms brought on by polished rice. Experiments like the above are too well authenticated and too numerous to be doubted. Pigs are more susceptible to beriberi than man.

If yeast vitamine preparation be given to pigeons paralyzed by lack of vitamins, they are relieved in one hour and completely restored in 12 hours.

Maybe some of you have noticed that health magazines which formerly advocated 10-hour cooking of oatmeal are now recommending that such cereals be cooked from 10 minutes to half an hour. I believe this is to avoid destroying the vitamins.

Now, after reading all this evidence about vitamins, aren't you proud to think that honey contains vitamins? It is uncertain to what class the vitamins in honey belong, and it is also possible that they are not present in any large amount.

For much of the above I am indebted to "How To Live" by Fisher and Fisk, to "Food Products" by Sherman, and to the Bureau of Chemistry, Washington.

Conservation Conversation.

Last month the printer, proofreader, editor, or possibly my own unruly fingers on my typewriter made me say "conversation," when I meant "conservation." If the same mistake is made again, it will give me the effect of stammering. If you think this "conservation conversation" is a little one-sided, remember a conversation with a lady is apt to be.

A few days ago I was talking with a domestic science teacher, an unusually bright and charming girl who is an enthusiast in her work. We were having a beautiful time, comparing notes as to our successes and failures with the new war recipes, when she suddenly said, "Oh, Mrs. Puerden, I envy you because you have a chance to experiment all you please. I have to try recipes in class and divide every ingredient into tiny portions so each girl may bake an individual cake, muffin, or loaf of bread." A few weeks before that another bright girl, who has been doing efficient work in an office for several years, said, "What fun you must have, Mrs. Puerden, testing recipes and working out new ones. I can't help envying you." I am passing these remarks on to other housekeepers because I believe we are a bit inclined to regard our work as drudgery. Some of it is, I admit, but there is drudgery in all lines of work, even gardening. Cooking is creative work, just as much as modeling or painting. What can give you a feeling of keener satisfaction than loaves of delicious bread and a baking of puffy drop cakes cooling in your kitchen? It adds much to the pleasure of cooking, too, when you have a family like mine with such healthy appetites that your successes and failures have to be labeled.

So many housekeepers say to me, "This war cookery takes so much time, it makes housework so much harder." Perhaps it does take a little more time, but it is interesting to work with new materials, and if you cut out a large part of the cakes and pastries which you formerly used—you will never miss them if you have plenty of muffins, fruit, and hon-

ey—you will find it takes little if any more time.

Notice that, contrary to my custom, I am giving two muffin recipes which are sweetened. To be frank, I should not sweeten the rye muffins to please my own taste, but, as the bran muffins are used by many as a laxative food, the honey probably makes them more effectual for that purpose. You may think the amount of soda called for in the bran muffin recipe is excessive, but let me tell you something: either the combination of sour milk and soda behaves differently for me, or most modern cooks are not using enough baking soda to neutralize the sour milk and depend upon baking powder to help raise the mixture. Our mothers used a round- ing teaspoon of soda, which equals two level teaspoons, for every pint of sour milk. The modern domestic science books usually estimate that a level teaspoon of soda is sufficient for a pint of sour milk, but after failing twice on that bran muffin recipe I increased the amount of soda to two level teaspoons, and the muffins were perfect with none of the bitter taste which is present if you use too much soda. Notice that I use the two teaspoons of soda in the johnnycake also.

Use all the potatoes you can for the next few months. There are many ways in which we can use them to save the needed wheat, and the use of potatoes is now considered a good way to neutralize an excess of acid forming elements caused by the use of meat, fish and eggs. Notice the two recipes calling for potatoes.

The tamale pie is good for the one dish meal.

HONEY BRAN MUFFINS.

1 egg	1½ cups sour milk or buttermilk
2 cups bran	2 teaspoons soda
1 cup flour	½ teaspoon salt
½ cup honey	

Sift the flour to which the soda and salt have been added and mix with the bran. Beat the egg thoroly in the mixing bowl, add the honey and then the sour milk. Stir in the dry ingredients, beat well and bake in well oiled muffin pans in a moderate oven. This makes 12 muffins.

RYE MUFFINS.

1 egg	1 cup wheat flour
1 cup milk	5 teaspoons baking powder
2 teaspoons honey	2 teaspoons melted fat
½ teaspoon salt	
1 cup rye flour	

Mix and sift the dry ingredients. Beat the egg in the mixing bowl, add the honey and the milk and then the dry ingredients. Add the melted fat, beat and bake in oiled muffin pans about 25 minutes. The large amount of baking powder is because rye needs more leavening than white flour.

JOHNNY CAKE.

1 egg	¼ to ½ cup wheat flour
2 cups sour milk	2 teaspoons soda
½ teaspoon salt	1 tablespoon melted shortening
2 cups cornmeal	

Mix and sift the dry ingredients, using ¼

(Continued on Advertising Pages.)

FROM Mr. Harry H. Cooper, a sideline of Griswold, Iowa, comes another suggestion to beekeepers to help out those who have gone to the war. He is willing, he says, to do his bit to help anyone anywhere near him, and thinks if every beekeeper would do the same, many bee yards, instead of being sold, might be held intact for the return of their owners. The picture shows Mr. Cooper with a late swarm hived on full sheets of foundation. "Common" bees he calls them, so I suppose they are blacks, yet he says they are very gentle, and you see he is handling them without a veil.

Owing to American foul brood having gained a bad hold, his little apiary was greatly reduced last year, and he plans to build up this year by pound packages. Then he will



A late swarm hived on full sheets of foundation.

run entirely for extracted honey. Last year scale hives showed the best result from clover flow, running for comb honey, 12 pounds a day; the best from the fall flow, running for extracted, 15 pounds.

Mr. Cooper's remarks about the time he gives to his sideline are interesting, so I quote: "I am a telephone man by trade, and handle the bees as a sideline. I can handle a pretty fair-sized exchange and quite a bunch of bees, with a little help from my wife and working a little overtime. I figure on about one to two hours every day, with 50 colonies, and a little time at night when I feel like it."

Notice that "with a little help from my wife." Don't you think that sidelines that everybody can enjoy and help with are the very nicest kind of all? At our house, we like best to ride hobbies that carry double.

Beekkeeping as a Side Line

Grace Allen

It is still a little early to report on the results of packed hives versus unpacked. Indeed, a complete report can be made only when the honey is harvested. But

to date, the packed hives show up splendidly. For the first time I have had winter losses in my little apiary. One colony, not packed, perished and was robbed out. One (with a super of leaves and leaves on both sides) flying on Jan. 25, showed a month later a great heap of bees which had died only recently, and not a cell of honey in the hive—evidently a strong colony, starved. (Thought I was sure of stores, too.) A prompt testing of the others by the time-honored method of "hefting" the back of the hive revealed several colonies dangerously light. These were hastily examined, and one fed that very evening. Several others may need it later. Stores in general seem to be lighter than usual, and beekeepers here are hoping that what looks at present like an early spring will really prove to be one, and not get frost-nipped later. Today (March 9), the first bit of fruit bloom—the veteran old plum, that always leads the procession rather far in advance, being now in practically full bloom. But high winds are making it impossible for the bees to fly. Elm and maple came out unusually early; and one warm day in early February when I had been puzzling over the pollen that was coming in before I could discover any available source, the proprietor of a new near-by greenhouse informed me that we were in partnership, as my bees had taken possession of his place while the windows and ventilators were thrown open to the warm air.

It seems to me I have never seen so much young white clover. Town yards are full of it, and it is in constant evidence along the sides of the streets. Our walks are all punctuated with exclamations: "Just look at the clover here! and here! and there!" There may be many a slip, for all that we strive, 'twixt clover in spring and honey in hive, but it looks good right now and we're ready for the best that may come.

These up-to-date, progressive methods are rapidly taking hold in North Carolina. In one of his excellent circular letters to his bee club, County Agent Bruce Anderson of Winston-Salem tells them this little story: "I wish to bring to your attention the record of J. M. Weavil, Kernersville, N. C., illustrating the efficiency of bee-club methods. He transferred part of his bees into standard 10-frame hives in 1915. Two of these colonies were Italianized in 1916; one of them this year (1917) produced 140 pounds of honey and had no swarm. The other, with its one swarm, produced 140 pounds also. (His

black colonies averaged 68 pounds.) Mr. Weavil has now 11 colonies of Italians in 10-frame hives. These results were attained only by intense application." These letters of Mr. Anderson's are certainly to the point, concise, instructive, explicit, giving definite directions for work to be done at certain times. His directions for wintering must have helped many a beginner to carry his bees thru in good shape. Here is an extract from his circular of Feb. 25, 1918: "Your honey crop for 1918 depends on how your bees are handled during March and April. Each patriotic beekeeper will strive to produce the maximum crop. The three main features controlling your crop of honey are: (1) a queen in every colony; if any colony in your yard has no brood by March 10, give it a frame having eggs from your best queen; (2) at the same time see that each colony has 16 lbs. of honey or syrup; (3) see that each colony has plenty of room for surplus honey and for the queen to lay, before swarming time; have prepared by April 15 two or three supers for each colony."

A visit with Mr. Kenneth Hawkins, coming back from one of his long trips thru the South, is always an inspiration. Last month he stopped a few hours in Nashville, on his way north from a trip thru the Gulf States. He reported a discouraging amount of foul brood in Florida; but also told of enthusiastic meetings all along his line, waked-up county agents, the formation of a goodly number of girls' bee clubs, and constant instruction, followed by the gradual adoption of improved methods. Progress comes that way.

R. G. Kinney, a farmer near Fostoria, Michigan, is enthusiastic about bees as a side line. He has eighty acres right on the state road, only three miles from a good market town. "Farming," writes Mr. Kinney, "pays me well; but there have been



R. G. Kinney, Fostoria, Michigan, is a successful farmer beekeeper.

some years when my bees have paid me still better." Isn't that fine?

His apiary consists of 100 to 125 colonies, golden and three-band Italians. Having both eight and ten-frame hives, he finds he prefers the eight frames. Bees are worked entirely for comb honey; and when clover, the main flow, comes on, the hives are crowded with bees. They build up early, get into supers promptly, and give very little trouble by

swarming. A 300-acre swamp within half a mile yields a succession of varied bloom that helps materially in brood-rearing and supporting the bees. Mr. Kinney's largest record was



Mr. Kinney has 125 colonies of golden and three-banded Italians.

in 1912—288 pounds of fancy comb honey from one colony. Winter losses run about 2 or 3 per cent. Twenty-five colonies are in chaff hives. These are wintered outside, and the others in a cellar where a temperature of 45 degrees is maintained.

As soon as the last issue of *Gleanings* arrived in this neighborhood, one Mrs. Dixie-Beekeeper called me on the telephone to protest against the statement in my department for last month that the so-called honey locust (*Gleditsia triacanthus*) yields no nectar for the honey bee. They have, or know, a honey locust, she says, that fairly hums with bees while in bloom. Then, what was worse, this disconcerting lady actually turned ABC on me, and there it was—honey locust is "one of the best honey-yielding trees in the United States." Now what shall I say next? And black locust not even mentioned—that is, in the main text (edition 1910). Dr. Phillips also lists honey locust as a source of nectar, but adds "much less important than black locust."

MY WISH IN SPRINGTIME.

I think that I would go quite mad
If day by tragic day
My every hour were crushed and sad
And there was no joy to be had
In any way.

The dread things that I read each morn,
They strike me to the heart
With dark dismay, or grief, or scorn.
Sometimes it seems each day is born
To add its part

To what has been so grimly told
Thru three long years,
While human hearts have grown so old,
So hurt and haunted, and too cold
For even tears.

But, God be thanked, once more the spring
Has brought us bees to hum;
And with the flashing of each wing
Within my heart shall something sing
That has lain dumb.

I wish the people all were wise
And lived among the bees,
And wars were done, and bitter cries
Were silenced under gentle skies
And cherry trees.



FROM NORTH, EAST, WEST AND SOUTH



In Northern California—The College of Apiculture of the University of California recently issued circular No. 185 entitled "Beekeeping for the Fruit-Grower and Small Rancher or Amateur." Geo. A. Coleman is the author and in this work he has outlined in a brief manner a plan whereby a few colonies may be kept profitably. Mr. Coleman also points out the desirability of beekeeping on a small scale, not only from the standpoint of the honey that might be produced, but likewise that amateur beekeeping is of much value for the proper pollination of most fruits, some vegetables, and where alfalfa and clover are grown for seed. This circular is for free distribution and may be had by addressing the College of Agriculture of the University of California, Berkeley, Calif.

The beneficial rains during the latter part of February have assured at any rate a certain amount of increase. The rate of increase will be in proportion to the amount of late spring rains. Beekeepers should show no hesitancy now towards "more bees" during the next two months prior to their honey flow. Increased production is our duty. Winter losses in the Eastern States are said to be high, and we here must help to overcome as far as is possible the anticipated shortage in the East. It may also be mentioned that prices for this season's crop are expected to be as high (and perhaps higher) than those obtained for the crop of last year. It will be safe to assume that the number of colonies this season will be fully as large as that of last year, since this spring's increase will compensate for the loss thru disease, queenlessness and other causes.

During the past few weeks several thousand colonies have been moved to deciduous fruits, orange, mustard, and wild radish bloom. Should any beekeeper experience difficulty in securing an apiary site on the property of a deciduous fruit grower, let him show a copy of the March issue of Gleanings to the orchardist and point out to him the fact that some fruit growers are willing to go to the expense of several hundred dollars in order to avail themselves of a sufficient number of bees to pollinate properly their fruit bloom.

There has been active breeding thruout February and the forepart of March, which has resulted in many apiaries having from four to six frames of brood to the colony. In not a few instances drones were flying in March. During the above period consumption of stores was high, and there is some likelihood that bees may run short during inclement weather this spring. The above conditions, however, have not prevailed south of Stanislaus county, where very little breeding so far has taken place.

On Friday evening, March 1, the Los Gatos Bee Club held the most enthusiastic meeting

in its history. There were 70 persons in attendance. The principal speakers were Mr. Demuth of the Bureau of Entomology, Washington; and Mr. Coleman of the State University. The following day in the afternoon another successful meeting was held at Monterey. This gathering of beekeepers was not only large, but was also very representative of the county. Thru the efforts of Mr. Coleman, a county club was organized. The need for such had long been felt. Frank Henniken and Earl Hansen, both prominent beekeepers of the county, are taking an active part in the activities of the club, for both realize the necessity for a co-operative organization. The desire for collective action in this county is so strong that the club has proposed a meeting for March 16, with a special request that a representative of the California Honey Producers' Co-operative Exchange be present at the meeting. Monterey and Santa Clara County readers of Gleanings, who are interested in this movement, should get in touch with Mr. Hansen, Box 106, Sunnysvale.

It must be gratifying indeed to the Promotion Committee (see March issue of Gleanings, under "Northern California") that so much enthusiasm has been shown amongst so many beekeepers regarding the California Honey Producers' Co-operative Exchange. The most important step taken by the Promotion Committee was that of securing the services of A. B. Massey of Fresno as their exchange organizer. For the past six years Mr. Massey has been engaged as campaign organizer for co-operative marketing associations. He conducted the campaign work of the raisin, peach, prune, and apricot growers, and it is common knowledge thruout the State today that these growers are organized into strong co-operative associations which have worked wonders for the mutual benefit of their members. Several thousand colonies have already been signed up according to the agreements of the Exchange, the approval of which amongst the beekeeping fraternity is everything that can be desired. Not only do many beekeepers respond readily to this co-operative work when approached, but there are also several instances where beekeepers, living in remote districts of northern California, have communicated with the writer to the effect that they wished to become members of the Exchange.

Modesto, Calif.

M. C. Richter.

In Southern California—Los Angeles County Club at a recent meeting elected Earl Shaffner, President, and W. H. Engle, Secretary. The club has been able to get a very satisfactory discount on all bee-supplies by buying col-



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lectively, and it promises to be one of the strong clubs of the State during 1918.

Riverside County Club held its regular monthly meeting Saturday, March 2, in the forenoon and the Neighbor Club of San Bernardino County held its regular meeting in the afternoon of the same day. Holding these meetings on the same date, but at different hours, makes it convenient for beekeepers to attend both meetings. A large number of beekeepers were in attendance upon both gatherings. An interesting talk was given by E. F. Atwater, Special Field Agent of the U. S. Division of Apiculture. Mr. Atwater is very desirous of helping the beemen in any way he can and urges them to call upon him for help with any of their problems.

Considerable disease is reported from districts where there was much melting down of combs during the hot wave of last June. Many report an apparent loss of vitality in queens and also some slowness about building up in colonies in these same districts. Evidently the loss of combs was not the only injury from that unusually hot weather.

The weather here up to Feb. 17 was almost like a continuation of summer, with scarcely a day when one could not open a hive for several hours with little trouble from robbing. Feb. 18, with but little warning, it began raining and continued at intervals until Feb. 27. The rains were general over the southern part of the State, and while some localities had much more than others, all have been greatly benefited. Parts of Santa Barbara and San Luis Obispo Counties had from 10 to 15 inches, while other districts in southern California got only from three to five inches.

While it is too early to predict the honey crop for 1918, most local beekeepers feel that some honey will be harvested. If the rains continue thruout the spring months, a good crop is possible.

Since the appearance of the auto truck, migratory beekeeping is becoming very popular in southern California. Some of the most successful apiarists move their bees as many as three times during the year. Beginning with the early winter months, they move to a locality where the bees get pollen and early honey from plants such as the willow, eucalyptus or pepper. This stimulates a colony to brood rearing and gets it strong and ready for the gathering of orange honey. Just as the orange blossoms begin to burst forth, whole apiaries are moved to the groves for a period of six weeks or two months. At the close of the orange blossoming season, some beemen move to the wild buckwheat and white sage ranges, and others move to the purple sage of upper Los Angeles and Ventura Counties. A little later the lima bean fields prove a great attraction to some. Beans are now grown over a large area, and the

acreage is increasing every year. While there are many varieties grown, the lima seems to be the only variety in this part of the country that produces sufficient honey to be of any benefit to the beekeeper. With the auto truck one can move bees from 30 to 50 miles in a few hours, while with horses it would have taken a day or two. With our fine concrete roads running over most of southern California, one extensive beekeeper told me it was just fun to move bees. I never found any particular fun in it, but it is certainly a satisfaction to know that you have the advantage of several different sources of honey. Climatic conditions and seasonal rain-fall enter so largely into the production of a honey crop here that the moving of an apiary a comparatively few miles often changes the balance from the loss to the profit side for the year's work.

More bees have been moved to the citrus groves than ever before and this year will certainly be a good time to solve the question: "Can our southern California orange districts be overstocked during the honey flow." In some districts, beekeepers, who had locations almost to themselves and made fine crops, have this year been surrounded by nearly a thousand colonies within a radius of a few miles. It has been said that it is next to impossible to overstock the orange district during a good honey flow and now we will have a chance to know.

L. L. Andrews.

In Idaho—Climatic conditions in this territory continue favorable to the honey producer, the mild weather reported last month still being with us. We had a slight snow flurry about March first but this only remained an hour or two. The nights are cold, but after the sun is up for a few hours it seems much like late spring. The first robin of the year was seen the first week of March, and local papers report other spring birds in the vicinity. One honey producer reported his bees carrying pollen about March first.

Early reports indicate a very light winter loss in this section. A number of honey-producers who should know, say that a cursory inspection of their yards discloses a loss of less than 10 per cent. One producer near this city took advantage of a sunny day in the week of Feb. 24 to go thru the hives in his yard of 230 colonies and discovered a loss of only 15 colonies, or 6½ per cent.

A honey-producer of a near-by town in Oregon, in making up his questionnaire, asked for exemption from military duty until the coming fall so he might look after his apiary this season. Information is now had that he has been placed in subdivision C of class 2, and will probably not be called in 1918—possibly not for 15 months.

Coast buyers are insistent in their demand



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for both comb and extracted honey, calls for comb predominating. This condition is unusual, as that market has for two years drawn on southern Idaho for more extracted than comb. A strong winter demand for extracted was anticipated, owing to the fact that the Coast had such a limited quantity of extracted from this section last fall because of high prices; but such demand has not materialized. Buyers are now investigating for fall delivery, and seem disposed to offer a high price. One or two are making an effort to contract both comb and extracted for early fall delivery, but producers refuse to make such an arrangement.

The Idaho-Oregon Honey Producers' Association has completed an arrangement with the Idaho Food Administrator, R. F. Bicknell, whereby its Idaho members may secure, under a permit, sugar for feeding purposes. All purchasers will be limited to 80 per cent of normal requirements. This Association has also taken the matter of sugar up with the Oregon Administrator in the interests of its Oregon members, and will no doubt complete with him an arrangement similar to that made in Idaho.

Several apiaries in this vicinity are offered for sale by men, who, because of other interests, have been in the business in a half-hearted way. Prices quoted are high, with buyers scarce. One yard made up of mediocre hives and equipment is quoted at \$10 per colony.

The Idaho-Oregon Honey Producers' Association now has three cars of bee supplies rolling westward for distribution among its members. These cars contain about 100,000 lbs. of goods which will be supplemented by additional cars of stock goods later on. Indicative of the pronounced change from comb to extracted, the above cars contain a number of extractors and less than 70,000 sections as against 700,000 sections used one season before the demand for extracted became so strong.

Honey-producers are replacing the auto trailer and small truck body attached to the rear of the ordinary passenger car with regular auto trucks of the larger type. Several of these trucks have been purchased for use the coming season. It is becoming apparent that the trailer or small box truck is not suitable for men having several out-yards.

Caldwell, Ida.

P. S. Farrell.

In Iowa—The past winter has been one of the most severe and trying, from a steady-on-the-job point of view. The Iowa beekeeper who still persists in wintering his bees out of doors will undoubtedly have a new experience to add to his long list of the past. Just now, it looks as if the only safe thing to do, is to do the thing he really knows he ought to do—winter his bees in the right kind of a cellar. Dr. E. F. Phillips of the Depart-

ment at Washington told the beekeepers, at the National meeting at Burlington, that the so-called double-walled hive left to itself out of doors is about as much protection to a colony of bees as a sheet of newspaper would be if wrapped around them. After the Department has taken the trouble to expend much money and effort in discovering a fact, why should the Iowa beekeeper bull-headedly ignore the statement and continue to winter his bees out of doors? Why go to school, and, after school dismisses, ignore the teacher's advice and teachings? Doing so does not alter the fact nor improve results. Some Iowa beekeepers are already finding many of their hives very heavy with honey and all the bees dead—frozen. Heavy stores did nothing for the bees this past winter with a steady zero weather pressing against improperly protected hives.

Iowa's State Apiarist, F. Eric Millen, and his coterie of assistants at Ames are doing a most excellent work over the State. Besides holding meetings with the beekeepers in their home localities, an educational short course of study has been arranged for the beekeeper to take at his home, at a cost of \$3 for the course, including two text books.

Hamlin Miller.

In Wisconsin—Half the ground is still covered with snow at this date (March 11) and large snow banks remain on the road side. Hard freezing continues at night. Maple-sugar bushes are being opened.

It is yet too early to report on the condition of bees in Wisconsin. Much the larger part of the bees in this State are still in the cellars. Many beekeepers report that their bees have wintered well, but will be short of feed in the spring. As the ground has been covered with snow all winter, the clover plants are looking fine. The soft-maple buds are good size, and on some early trees the buds are almost ready to open now. Bees outside seem to have wintered finely, and have had two good flying days.

There is an unusually large demand for bees this spring in Wisconsin.

N. E. France.

In Michigan—As usual, we are blaming the winter for our losses. However, the better beekeepers have not suffered losses much greater than normal except from shortage of stores.

Nineteen students took the short course, which includes beekeeping, at the Agricultural College this winter. The number was small but the seed sown fell on fertile ground. The results may therefore be great.

From the nature of the correspondence received during the last few months, there is to be a considerable investigation of the honey resources of Michigan by large beekeepers



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from other states. This State needs more efficient beekeepers and the territory is not so crowded but that many can find good pastures and sufficient room for expansion. The Agricultural College offers its assistance to those who contemplate changing their locations.

It is planned to hold county beekeepers' meetings during the latter part of March in Washtenaw, Wayne, Lenawee, Hillsdale and Branch counties. Beekeepers in those counties who do not receive notices of the meetings should send their names and addresses to the State Inspector of Apiaries.

The sugar situation seems to be improving very rapidly. From correspondence very recently received, it seems that beekeepers are finding it possible thru their letters of authority to secure considerable amounts of sugar, and, in some cases, enough to take care of the needs for spring feeding. However, some are unable to secure any sugar at all. In order to supply the needs of those who find that their bees are actually starving and are unable to secure sugar after trying in every way to secure it locally, a small quantity of sugar has been set aside for the use of beekeepers by the Food Administration. This sugar will be supplied as long as it lasts to those who must have sugar at once at the rate of 10 cents per pound plus postage. It is being handled at actual cost by M. H. Hunt & Son and the A. G. Woodman Company, but all remittances must be sent to B. F. Kindig, East Lansing, Mich. The sugar will be shipped by parcel post or express in lots of 20 and 40 pounds. If the cost, including sacks and packing, does not amount to ten cents per pound a refund will be made to the purchaser. Those living within reach of Lansing should come in person, bringing sacks with them. Please do not ask for sugar until you have exhausted every resource locally and until the time arrives that sugar must be secured to avoid starvation.

Last year the beekeepers of Michigan had the active co-operation of three of the county agents of the State. To date about 25 more have volunteered their services. The county agents want to help the beekeepers. Most of them have had little experience with bees and want the beekeepers to tell them and show them how they can give assistance. Get acquainted with the county agent; tell him your problems; take him to your beeyard, and initiate him, if he is not familiar with the work; ask him to co-operate in the holding of field meetings; request him to furnish bulletins and literature to the beekeepers who are not using up-to-date methods. In other words, make use of the servant whose salary the beekeepers are helping to pay. Help the county agent to feel that, even tho he is not familiar with beekeeping, yet there is a particular service that he can render to the beekeeping industry. The coun-

ty agents want to be useful; but it is in general up to the beekeepers to show the agents how to help.

B. F. Kindig.

East Lansing, Mich.

From Ontario— It is too early to give a fair estimate yet as to condition of bees, stores, honey-producing plants, etc., but judging by reports at hand which are quite varied, would say that wherever colonies were strong, well protected, and, above all, had abundance of good stores, winter loss will be light. Just today I visited one of our own apiaries and found every colony alive and most of them looking well. This yard had considerable sugar fed and colonies were all strong. On the other hand, our home yard had mostly buckwheat stores and much of their stores consisted of heavy combs of buckwheat placed in the brood nest in the fall in lieu of light combs removed. I only did this as a matter of sentiment, as buckwheat was worth more than sugar, but I hated to buy much sugar for reasons that can be imagined. In this yard I find considerable dysentery and a number of colonies will perish before warm weather comes. This apiary is also exposed to the southwest and got full force of the great storm of Jan. 12 from that direction. After the storm was over, the ground was bare in most places and bees have been exposed to the unusual cold ever since. That may have aggravated conditions. A neighbor just half a mile from my home has 100 colonies and that same storm buried his bees all over. They have been covered ever since, and they are wintering finely. As they have buckwheat stores and the same kind of hives, it looks as if the greater exposure had caused poorer wintering with our bees here. Weak colonies are going out by wholesale. A man two miles from my place reported one-third dead a month ago. There was much natural swarming there last year, and I surmise his colonies were weak in bees and perhaps short of stores. Cellar-wintered bees are reported to be wintering well—in fact, the winter has been ideal for cellar conditions. Another man reports to me that he will lose a half of his 100 colonies. He had European foul brood in his apiary last year and many colonies were weak in bees when winter came on, and weak colonies could not stand weather like we have had ever since early December. Summing up as a whole, I predict that the losses among the extensive beekeepers who produce the bulk of the honey will not be nearly as heavy as was feared a few weeks ago. Much, of course, depends upon the weather of the next few weeks, as the bulk of the bees east of a line drawn north from Toronto have not had a flight at this date, Feb. 28. Heavy rains during the last few weeks have taken snow off the fields and covered clover with a solid sheet of ice. It would only be a guess to say how clover



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will come thru, but prospects are not improved by the snow leaving so early. As clover is our main standby, we know nothing at this date as to what honey prospects will be. As to stores, have had no reports and can only say that I believe our own bees have sufficient to see them thru. Where the bees have dysentery, stores disappear rapidly and those affected in my home yard may be short, but it makes little difference as colonies having dysentery badly as early as the end of February seldom amount to anything for they rapidly spring dwindle.

At this date, no appointment has been made to fill the position made vacant by the resignation of Mr. Pettit. It is to be hoped that when this appointment is made, that a worthy successor may be found to take Mr. Pettit's place. As near as we can figure out, it looks as if many men, whom the department think capable of doing the work, will not under any consideration accept the office; while, on the other hand, many whom the department do not think eligible for the job would gladly accept, if they had the chance. As I have no ax to grind, my sincere wish is that a man may be appointed who will be a real help to the industry, and that political pull (or any other kind of a pull) will not influence the powers-that-be to place any other kind of man in the position.

Much is said in March Gleanings about sugar for spring feeding. Canadian apiarists will be thankful that unless something unusual happens, they will not have to get sugar for spring feeding—at least, it will be their own fault if they do, as there was no sugar shortage in Canada at time fall feeding was necessary last year. Sugar is fine for winter stores, but only a last resort for spring use, as colonies in spring do not seem to be in condition to make the necessary chemical change in the sugar syrup, and they will not build up like they will on honey at that time of year.

February has given us welcome relief from the long spell of very cold weather prevailing thru December and January, by being fairly moderate so far as cold is concerned. As a climax to a winter of more than usual interest in many ways, there were heavy downpours of rain with lightning and thunder at different times during the last two weeks of the month. This rain coming on top of great banks of snow caused bad floods in many places, particularly in western Ontario. In a few cases, at least, stock and bees were destroyed by the high water. Some apiarists near here, including one of my own, had the water right up to entrances of hives, and I found it necessary to pry the hives loose and block them higher. Yes, they are likely to be placed higher another fall, and then the conditions of this spring are not likely to occur again for many years.

Some time ago I mentioned in these col-

umns that a well known wholesale man in Toronto was telling me of his intentions of getting a carload of honey from California for Ontario use. Only a few days ago I happened to meet him again and on inquiry as to where that honey was, he replied: "Oh, I got a chance to clean up handsomely on the car and it came no farther than New York City." Possibly it made up part of that big cargo that was so damaged, as mentioned in February Gleanings.

Honey is about off the market, and what little is moving, is quoted at 22 cents. for white and 18 cents for buckwheat. That ought to be high enough to suit anybody, even the consumer, by the time he pays in addition, the wholesale and retail profits. Personally, I am among those who think that honey can be hoisted too high even for the good of the beekeeper, as it can get so high that people will think it is out of reach—in fact, they will begin again to class it as a luxury rather than a staple.

Markham, Ont.

J. L. Byer.

In Texas—There is yet much talk about how the bees came thru the winter. Revised reports have been necessary for two reasons. In those sections where excessive losses were inevitable, many beekeepers did not attend to their bees and the exact loss is hardly determined yet. It is thru such beekeeping methods that the loss of Texas will be made more severe than it should be. In some sections it has only been possible to ascertain recently if there is any winter loss of bees or not. In the extreme southern part of the State, the bees wintered well and have been at work long enough at this date to be good, strong colonies. In the Gulf Coast region, the loss has been excessive, due to exceedingly trying climatic conditions and neglect. The same may be said of the southwest section, but here the total loss in colonies will be greater because of the larger holdings. In the western section, the loss has been light where attention has been given; but where the bees were neglected the loss will be considerable. In the eastern section, the bees came thru in fair shape; but very short on stores. In the central section, the losses have been heavy, largely due to neglect, as the fall honey-flow was cut very short last year. In the northern section, the bees came thru in good shape and most of the colonies have stores enough to last until the spring honey-flow.

With bees starving in many sections and very weak in stores in other sections, it is interesting to learn the conditions of the honey plants. In the lower valley section, the plants are about normal and the bees have already done very well. In the coast region, the honey flora has suffered by the drouth of last year and the excessive cold of the past winter. Except in the locality of



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the southwest section, the honey plants are in very poor condition. In the western section, the honey plants (or native honey flora) are in poor shape, and dependence will be in alfalfa that is irrigated. In the eastern section, the honey plants are only in fair shape and they are much below normal in the central section. Prospects for the honey plants are good in the northern section.

At present the prospects for a honey crop are hard to determine and remain a mere matter of prophecy. Thruout the gulf section, the southwest and western sections, the prospects for a honey crop are not bright; but climatic conditions can yet change, in the form of rain, and much honey will be made. It is yet too early to speak much of honey plants over the remainder of the State.

With the unfavorable wintering and perhaps doubtful honey prospects, are many bees being offered for sale and are many being bought? But few bees are being offered for sale and there are but few buyers. Where losses have been many it would seem that many who have some bees left would want to sell them; but such does not seem to be the case. Many hesitate to buy any bees, with honey crop prospects uncertain. So many bees are without stores that they would make a very poor purchase.

Generally speaking, climatic conditions are improving and it is hoped that this month will see a decided improvement in the prospects for the year. F. B. Paddock.

College Station, Tex.

In Florida—Prospects indicate that Florida will be on the map as a honey-producer this year. After the long cold winter, spring has come with a rush, and everything has put out the biggest bloom known for years. Orange trees, particularly, seem to be making up for their shortcomings of the last two years; but, unfortunately for the beekeepers, the blooming period will be of short duration and will be over before most colonies are in shape to do their best work. Usually the orange will begin to yield early in February and the flow continue until April. In 1914 we made more honey after Apr. 5 than before; but the bloom is unusual this year, and there seems no possibility of its lasting later than March 20. In this immediate neighborhood the flow started on Feb. 22, and with the abruptness of a log-wood bloom—no honey coming in one day, and the next day the loaded bees dropping all over the yard. Weather conditions seem to be ideal for nectar secretion, and every bloom contains a good sized drop. Yesterday (March 3) I watched bees arrive at the grove, and observed that they visited four, three, and, in one case, only two blossoms, before departing with their loads.

Other sources of honey count for nothing when the orange is yielding so profusely.

The scrubs around here are full of andromeda in full bloom; but I have been unable to find a single bee working it. So our crop of orange honey should be of exceptionally fine flavor and command the highest price. What that price will be remains to be seen, but producers should go slow before selling for less than 20c per pound f. o. b. shipping point.

I have not yet heard from the pennyroyal section; but, if it has bloomed as heavily as the little of it here has done, there should have been some surplus from it.

Why is it so seldom that anything is heard about the Carni-Italian bees? I have kept three or four colonies of them for about six years, and every year that there has been a good honey flow they have so far out-distanced the Italians that it seems possible they may be especially adapted to Florida conditions. They have several characteristic advantages which are not possessed by the Italians. They are no more inclined to swarm; they gather very little propolis; cap their honey white; stay quietly on the combs during manipulation, but are cleared from an extracting comb in one-third the time that Italians can be.

By the time this appears in Gleanings swarming will be at it height, if not already over, and for the benefit of beginners and others who have not had Florida experience, let me warn them to hive no big swarms on starters or half sheets of foundation. The advice of one noted apiarist, in a book published on Southern beekeeping (and frequently given by others) is to the effect that big swarms can be put on starters because they are fitted for comb-building, and small swarms can be put on full sheets because it gives the additional help they need. This advice must be reversed for Florida during an orange flow. Never hive a good swarm on anything but full sheets of foundation, for otherwise you will surely have a hive full of drone comb. If you have neglected to order enough foundation, it would be as profitable to hive swarms in boxes or nail kegs and transfer them later. Harry Hewitt.

Apopka, Fla.

TO CONTRIBUTORS.

Gleanings in Bee Culture always wants interesting experiences of beekeepers, novel beekeeping sights or scenes, beekeepers' "short cuts," informing stories of successes and failures with the reasons why. Such articles, long or short, will be far more valuable to our readers if accompanied by photographs illustrating what is told. Such photographs should be black and white, sharp and full of contrast, and a glossy print if possible.

MANAGING EDITOR,
Gleanings in Bee Culture.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Mother Bee NURSERY RHYMES By M.G.P. (Mother Goose Plagiarized)



Shipping Honey to Soldiers at the Front.

Referring to Dr. Miller's note about how to ship honey to our boys at the front, it may interest many readers to know how I have been successfully doing it for a year and a half. My second son is fond of bees and just as fond of honey. So, when he took his place in the fighting line, I decided that he should not want for honey. Therefore once a month or so, I ship him a can among the other tid-bits the mother knows he likes. In the paint stores here varnish is often sold in a quart can that has a small screw cap. So I bought a lot of new ones at 10c each. To fill one, I warm the honey in the warmer above the cook stove, so that it will run freely into the small hole of the can. The Canadian limit of weight for packages to France is seven pounds, so I requisition a square cracker box which just holds nicely the can of honey and the dainties that make up the limit in weight. This box is wrapped in cotton cloth, which is sewn in position, making a package that brings rejoicing not to one boy alone but to all the boys around, for in the trenches the community spirit is strong. As parents, we have gone thru the agony of the fateful telegram "dangerously wounded

in face;" the weary waiting for more news for 10 days, trusting that no news was good news; then the joy of a hopeful pencil scrawl from himself. Since many who read this will, alas, have a like experience, let me assure them of one thing: the kindness and skill displayed by the doctors and nurses to our boys is almost beyond understanding, and the good folks of the town where the hospital is located do their utmost for other folk's sons.

Victoria, B. C.

F. Dundas Todd.

Condemns Home-made Hives; Wants Paint.

Home-made supplies, January Gleanings, page 26, may be all right for the other fellow, but

not for me. I believe any one who is contemplating putting money into a home machinery plant, will not do so after he tries several brands of home-made hives. One's local mills have the necessary machinery, good workmen, and a willing spirit; but all, or nearly all, of the extensive beekeepers buy their hives from mills that make a specialty of such work.

For the last two weeks I have been "fixing up" hives which I bought along with the bees that they contained. Without an exception I have discarded the home-made ones and have kept under protest those that were made by the local mill. Next summer, when I need a hive, I want a good one—one that is accurately made to the 32nd of an inch; one that is square, and that will take a super without leaving bee cracks at end or side.

After working on these unpainted hives I am entirely unable to comprehend how a man as particular concerning details as is Dr. C. C. Miller always seems to be, can let his hives go unpainted. Locality? Well, an unpainted hive in this climate is fit only for kindling wood after two years of use.

Visalia, Calif.

DeWarren B. Davis.

How That Snow Picture Was Taken.

The frontispiece for March Gleanings is interesting to me for

more than one reason. The apiary shown had been established in the previous spring, and on Jan. 1 following I took the train and went the 90 miles necessary to get there, so that I could see how the bees were wintering, as a card from a friend said they had had a heavy snow fall up there. This was my first season's experience with bees on the let-alone plan from October till the following April, without giving them a visit during all that time. It was very cold at the time the picture was taken. After digging down to the entrances of a couple of cases and finding a space cleared by heat from the bees, I decided to leave them alone. They wintered perfectly and never since have I bothered

HEADS OF GRAIN

FROM

DIFFERENT FIELDS

going to the expense of making a winter trip to look after them, and have lost all dread of anything happening by bees being covered up even for two or three months. Of course, I do not want any sealed covers over hives when wintering like this, for once in a while great loss might occur under certain conditions. The picture is also interesting to me because this was about the first time I had ever used a camera. Strange to say, the pictures taken at this time when I was absolutely green in all things pertaining to a camera, were among the best I have ever obtained—so much for luck and a fairly fool-proof camera. A companion picture to the one in question, was pronounced by Dr. B. N. Gates to be one of the finest winter scenes of an apiary he had ever seen, and, as I have already intimated, it “just happened.” [This, too, was a remarkable picture.—Editor.] J. L. Byer.

Markham, Ont.

Bees Make Use of a Bullet Hole.

While on duty east of Douglas, Ariz., one of my patrols reported it had found a swarm of bees in one of the international monuments which mark the U. S.-Mexican border line. Being interested in bees, I took the time to go down and see it and found that there was a nice swarm in the hollow part of the steel monument and that a bullet hole on the Mexican side was being used as an exit. Since the monument was near the Agua Prieta battle field, I concluded a bullet that had been intended for some poor Mexican's heart had missed its aim and had really done a good “turn” in making a home for a swarm of bees.

L. S. Halzwarth,
Captain 1st Ariz. Inf.

Naco, Ariz.

Queen-Breeders Nice People; Fumigation

To the credit of queen-breeders I should like to state that I bought half a dozen queens that arrived in poor condition, two being dead. I mailed to the breeder our postmaster's written statement of the condition of the queens, expecting, of course, to receive two more queens; but, to my surprise, I was sent six more. I think queen-breeders are a nice lot of people.

On page 793 it is stated that 4 ounces of bisulphide is sufficient for ten supers. From my experience, that is twice as much as is needed. It is also claimed that, in order to make sure of killing the eggs, the exposure should not be less than twelve hours. Texas Bulletin No. 158, pages 29 and 30, gives very complete data on the subject. For those who have not the bulletin I would explain, that, for ten supers, $\frac{1}{2}$ pound would not kill the eggs in 24 hours; but 2 ounces

for ten supers is sufficient to kill everything but the egg. All the millers would be killed in 20 minutes, and the rest in from one to twelve hours. The eggs hatch in ten to twelve days, according to temperature, and a second fumigation is necessary when the eggs hatch. One ounce is sufficient for 4.35 cubic feet of supers. Everything must be tight to hold the gas for twelve hours. This Texas bulletin is finely illustrated, and gives the best description I have seen of the remedies and life history of the bee-moth.

Hammonton, N. J.

C. E. Fowler.

A Long-Reach Swarm Grabber.

This illustration shows my “swarm grabber,” a device for grabbing a limb or twig with a swarm of bees. You will notice the jaws are open ready for grabbing the limbs. The cord attached to the leverage part is then pulled taut and wrapped



two or three times around the handle at the handhole, when the limb may be cut with a fruit pruner. By using a long pole on the swarm grabber the operator may avoid stings and also be able to get clusters from rather high and inaccessible places.

Pataskala, O.

Henry Zinn.

Uniting with Honey;

In your editorial on uniting bees I see you don't always seem successful. Here is a good method by Alexander. Take half a pint of honey and pour part of it over the bees and tops of the frames of one hive and set the other hive on top of it and pour the rest of the honey over the

HEADS OF GRAIN

FROM

DIFFERENT FIELDS

frames and bees of the top hive. Put on the cover, and in one minute they will be too happy to fight. Try it on your weak colonies in the spring. You can even introduce a plurality of queens by this plan. It is the Miller smoke method without the smoke. Next winter when packing those big winter cases, just try one without packing, and over the entrances put doors to be kept shut tight when the weather is too cold for the bees to fly. I wintered mine that way—some packed and some not, and I can't see any difference. Both are No. 1.

Bellefontaine, O.

Clyde Cordrey.

A Student's Ten Commandments of Beekeeping.

of California a little examination was given,

At the conclusion of the first half year's instruction in apiculture at the University

the tenth question in this examination being: "What are some of the things essential to success in beekeeping?"

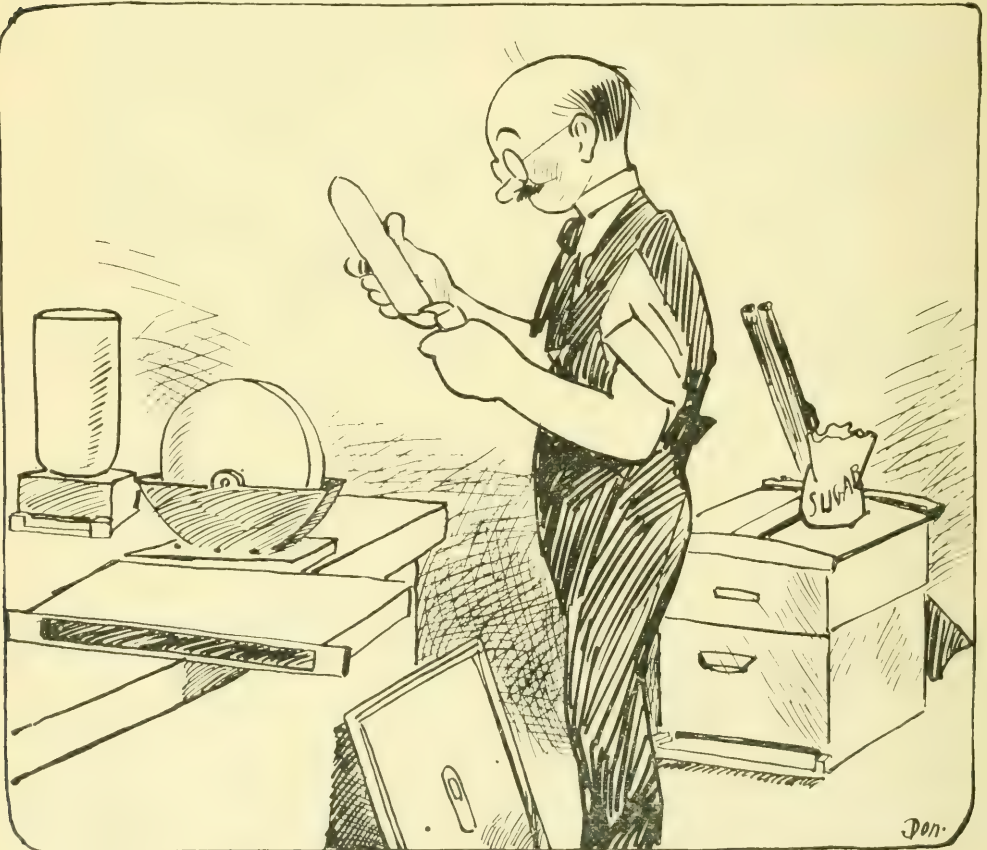
One of my students gave the following answer, which might be adopted as the Ten Commandments of beekeeping:

"(1) Good beekeeper (knowledge and dependability); (2) good bees (Italian); (3) good hives; (4) good bee pasture; (5) good equipment—smoker, hive tool, extractor, wax-extractor, storage facilities, honey packages and an enclosed place to work; (6) good apiary site, with wind protection, even temperature, and convenient; (7) honest, agreeable neighbors; (8) a love of the work; (9) a good market; (10) some other capital, or business, to tide one over a year of small returns."

I predict that he will be a successful beekeeper.

Berkley, Calif.

Geo. A. Coleman.



THE BACK LOT BUZZER.

Andy Jimpson says he gave full instructions with the bees he sold to a beginner the other day, but the feller called him up by phone last night and said they arrived all right, but he had forgotten what was the next thing to do. Andy said there was only one thing he could think of, an' that was to send the money.

THE annual meeting of the National Beekeepers' Association held at Burlington, Ia., Feb. 19-21, was poorly attended, altho the program was excellent. The first session opened with only about 20 beekeepers present, and the largest number present at any session was 40. Prof. Francis Jager, president, opened the convention Tuesday evening, with an interesting address on the uses and functions of the national association. He had to leave the same evening to meet another appointment, and the convention was thereupon turned over to the skillful handling of C. P. Dadant, as temporary president. John C. Bull, secretary, was not present, so Hamlin B. Miller of Iowa was chosen temporary secretary. The regular program was taken up Wednesday morning, when J. A. Warren of The A. I. Root Co., representing E. R. Root, spoke on "Present and Future Beekeeping." Prof. F. Eric Miller of Ames, Ia., gave an excellent talk on "The State Agricultural College and Beekeeping in 1918." Dr. E. F. Phillips of Washington, D. C., spoke on extension work. His address and explanation of the Government's work in behalf of beekeeping elicited the keenest interest. E. D. Townsend of North Star, Mich., was not present, but sent a paper on "Some Proposed National Work for 1918." C. P. Dadant gave a very instructive address on "Making Honey a Staple." J. W. Stine of Burlington, Ia., pointed out in his address how the Government can help the beekeeping industry, and Geo. W. Williams of Red Key, Ind., sent a paper on "A Merger of All Beekeeper Societies." Harry Lathrop of Bridgeport, Wis., read a paper on "The Builders" and warbled a solo at the Wednesday evening session. At this evening session officers for 1918 were elected as follows: David Running of Filion, Mich., president; Hamlin B. Miller of Marshalltown, Ia., vice president; Floyd Markham of Ypsilanti, Mich., secretary; David Running of Filion, Mich., and Floyd Markham of Ypsilanti, Mich., directors. Thursday forenoon was taken up with the reading and discussion of a paper sent by Ira D. Bartlett of Michigan on "Standardization of Bee Supplies and Appliances." The subject brought out more lively discussion than any other considered by the convention. E. S. Miller of Valparaiso, Ind., sent a paper on "The Future of the National," as did J. H. Stoneman of Blackfoot, Ida., on "Making a Start with Bees in Idaho." Dr. E. F. Phillips, in the absence of Dr. S. A. Jones, chief of the Bureau of Crop Reports, discussed the work of this bureau as it affects the honey interests. The association passed resolutions to the following effect: appointing Dr. E. F. Phillips a committee of one to secure an investigation

JUST NEWS

Editors

combless packages and commending the work of the apicultural department of the Bureau of Entomology

It is a little early to tell how bees have wintered thruout the whole country, but from a large number of reports received by Gleanings, all the way from Maine to California and Texas, we can say that they have generally come thru the winter in better condition than was expected two months ago.

Beginning in the East, New England generally reports heavy losses—50 per cent to 75 per cent of bees, and surviving colonies generally weak and short of stores.

Ontario reports heavy local losses, but the losses of bees well cared for not nearly so large as feared a few weeks ago. New York State reports bees in cellar having wintered very well, but from 30 per cent to 80 per cent loss of those wintered outdoors, loss being due largely to light stores or inability to reach stores. New Jersey reports 40 per cent colony loss. The southern and western counties of Pennsylvania have from 50 per cent to 75 per cent of bees dead; northern counties not quite so bad, having better winter stores. Virginia, North Carolina, Georgia, and Florida, while returning varied reports, seem on the whole not to have had unusual losses, while some sections report unusually good wintering. Southern Virginia, Kentucky, and Tennessee appear to have suffered severely (50 per cent to 75 per cent dead).

In the central North, the condition of bees seems to be unexpectedly good. Michigan reports conditions much better than expected, altho considerable feeding is necessary. Ohio's bees have come thru in very fair condition. Illinois and Indiana report bees having come thru fairly well—or better. Varying reports come from Iowa, Missouri, and Oklahoma—good and bad.

When it comes to the Rocky Mountain and Pacific Coast regions, the reports are almost all very favorable. Idaho and Colorado send word of excellent wintering with prospects for a bumper honey crop. Montana is taking interest and sends a good report, as do Utah and Nevada. With copious rains during late February and March, California sends word of excellent condition of bees and the prospect of a fine honey crop thruout the whole of the big State. Bees were storing honey in some California apiaries as early as March 1—and before.

Texas, too, sends word of the big drouth there having been broken by a substantial rainfall during the first four days of March, and bee prospects accordingly brightened.

of the vitamins contained in honey; endorsing the teaching of the uses for honey by high schools and state colleges; asking parcels post privileges for

"THERE will be thousands of tons of the finest sweet go to waste in Indiana this year because there aren't bees enough in the State to gather one-third of the white-clover nectar there will be this season."—Boone Miles, Parke Co., Ind.

"I can say of A. I. R., 'whom having not seen I love.'"—A. Smith, Lamoille Co., Vt., Feb. 15.

"Would have sent sooner, only Job has nothing on me for poverty. No honey for almost two years."—Pat J. Dunphy, Elbert Co., Colo., Feb. 16.

"Gleanings is not as good as it used to be. I take it more for the advertisings now than for any other benefit."—Mont Wyrick, Dubuque Co., Iowa, Feb. 25.

"Gleanings is one of the most interesting, wholesome and valuable periodicals of which I know, and I would not be without it in my home."—A. M. Dewees, Grubbs, Del., Feb. 4.

"While we South Texas beekeepers have been thru the hardest times and the most severe drouth known, we are going ahead with what we have left."—M. B. Hinton, Karnes Co., Texas, Feb. 25.

"Our winter has been the hardest for about 20 years. We are expecting a good honey crop next season, as there was an abundance of young clover last fall."—Claude Barker, Jasper Co., Mo., Feb. 13.

"My experience with bee disease has been during the last six years, and it is —!—lots of trouble—you understand."—W. A. Losh, Butte Co., So. Dak., March 5. [We understand—you have put it very understandably.—Editor.]

"I do not like your paper the way you are running it now. We need more articles by big bee men and not so much talk between department editors. We have learned all they ever knew long ago."—V. V. Dexter, Kititas Co., Wash., Feb. 27.

"Bees carrying in pollen today from willow. No cold weather at all here. Buds pretty well out. Sorry for you fellows over the hills. Oh, yes, yellow jackets are plentiful at present. Never saw them at this time of the year before. Wish they were in the Germans' pants."—W. Stevens, Columbia Co., Ore., Feb. 9.

"When a fellow is trying to keep a few bees at his office two miles from home, and robber bees bother the colony with the Root queen in all the fall, and he puts them away for the winter, and in the severe weather the dead bees can be raked out from that hive by hundreds, and he wonders if they were queenless, and if they have been robbed of their stores, and then on Feb. 24, with the ther-

BEES, MEN AND THINGS

(You may find it here)

mometer at 50, he trudges to the office with his last box of honey to feed them if they need stores, and opens the hive and finds great quantities of stores,

and on a central frame he finds the queen with clipped wing and a bunch of brood nearly as large as his hand—oh, Man! Ain't it a **Grand and Glorious** feeling? (A la Briggs.)" L. L. Wheeler, Civil Engineer, Whiteside Co., Ills., Feb. 25.

"I notice in one of the Gleanings last fall you illustrated a cover punched with nail holes (10 lb. pail cover) as a feeder, and you advise beekeepers to punch these holes themselves. Why, my dear American people, we have had this feeder in use for four seasons, and this cover is supplied by a manufacturing company in Toronto already punched."—Jas. M. Patterson, Vinemount, Can., Feb. 5.

"I have been here in camp for a month now. The weather has been rather cool, and such beekeepers as I have had a chance to talk with have complained of the lack of rain and the lateness of the sage. The sage is being cleaned off around the camp here and has practically spoiled a good location. Raining here today. I am still a beekeeper."—Private Leland B. Davis, Co. C., 115th Field Signal Brigade, Camp Kearney, Calif., Feb. 22.

"I have handled bees on a small scale for many years. I had six swarms on a city lot close in during the past season, and five of these returned me over 550 pounds of honey. Could have sold every pound of it at a good price, but with the scarcity of sugar, the high price of spreads for bread, and a family of seven children, I find having the honey very fine."—C. N. McMillan, Woodbury Co., Iowa, Feb. 13.

"Glen Brothers, nurserymen of Rochester, N. Y., write me as follows: 'Butterfly bush, which is an exceedingly rapid growing bush, not described in our catalog. Its blossom has the greatest attraction for bees that we have ever seen. They literally settle on the blossoms in droves. In the rows of these bushes in our nurseries the hum of bees produces quite an audible sound.'" — Galusha M. Baleh, M. D., Berkshire Co., Mass., Jan. 22.

"I had been bothered with rheumatism so much that many nights I could hardly sleep. I began to eat considerably more honey than I had previously eaten and I am bothered hardly any now. Of course, this proves nothing, but suppose you bring up the subject and inquire whether those readers of Gleanings that are eating a good deal of honey are ever bothered with rheumatism. I do not mean inflammatory rheumatism for which bee stings have been recommended. For in-

stance, ask such a man as Dr. Miller, who is as old as the hills and still young. Why not a world-wide propaganda be started 'Eat Honey and Cure Rheumatism.'"—Jas. Bachler, Madison Co., Mo., Feb. 7.

"For the purpose of honey production we have found Maryland physically fit. While not up to the standard of the larger producing states, Maryland is nevertheless in the first rank of fine beekeeping regions. The climate is particularly favorable and the seasons last practically from April to the first of November. An abundance of nectar-producing plants, coming in the proper sequence, large crops of honey are assured."—G. H. Cale's address before Maryland State Beekeepers' Association.

"Lost all of my bees this winter with plenty of honey in each hive. The bees froze and scattered all thru my hive, showing that they were not clustered as usual in extreme cold weather. Think I lost them on Jan. 11, when it was 34 degrees at midnight and 12 degrees below zero in the morning. My theory is that it caught them scattered over the frames. About 90 per cent of the bees in this locality that I know of are dead, and were found in the same condition."—Chas. H. Rogers, Holmes Co., Ohio, Feb. 20.

Eleanor J. Kreitler, Practice Teacher, of the Kent, Ohio, schools had a score of her pupils write the A. I. Root Company regarding bees and beekeeping after the little students had been studying bees for a time. Here is one of their letters, typical of them all: "I would like to know something about beekeeping. I want to know how much honey about 4,000 bees can make in a year. How you keep the swarm in the winter time? How much you get from one hive in a year? I would like very much to have you send me a live bee. I would like to have a queen."

"I had eczema on my leg for five years. Doctor made it no better. Itch! Oh, my! It was spreading. I thought I would try binding on some honey. In a couple of days it itched so I took it off, and washed my leg with soap and warm water, and put some more honey on, binding it up again. In about a week it began to itch again. I gave it another good scrub and put on some more honey. It did not itch any more. I left the bandage on two weeks and the skin became nice and smooth. That was two years ago and the disease has not returned. I used the fall honey gathered from the aster and goldenrod. Whether that would make any difference or not I don't know."—F. J. Lee, Lee Valley, Ont., Feb. 18.

"Even though you have great things over there, yet we obtain results here that would make Americans' mouths water. The year 1916 was a bumper year, when one of our members, with 16 hives, made a net profit of over £100 (\$500) from extracted honey. . . . Foul brood and Isle of Wight disease possess no terrors for us. The proper

application of 'Bacterol' and a good queen in the hive is all that is required. I observed when the Isle of Wight disease was spreading over the country it followed the rivers, and we on the hills were the last to be attacked, and I suppose the first to be free. Look to the hills for aid."—Alexander Mackie, Supt. of Police, Marlborough, Wilk., England, Feb. 5.

They Say It Isn't So.

"And even John H. Lovell is just as far wrong in some of his sayings and doings. For instance, in January Gleanings, page 20, in his article on 'Bird Flowers,' two different times he mentions the fact that we have only one species of humming bird in the United States. This is very misleading to the young nature student, especially in ornithology, for any bird student of intelligence will tell you that there are about a dozen species of humming birds in the United States. The State of Maine has only one species, and that is the ruby-throated. Mr. Lovell must remember that the borders of the United States extend far beyond Maine. I must call Mr. Lovell's attention to the fact that the ruby-throated humming bird is the only member of the family Trochilidae inhabiting the part of the United States east of the Rocky mountains; but from the Rockies to the Pacific Coast and to the borders of Mexico, there are from eight to 10 other distinct species of this family. And Mr. Lovell's statement that there are 'more than 500 species in tropical America' is also highly exaggerated, and in about the same proportion as his statement that only one variety of Trochilidae inhabits the United States."—E. C. Davis, Saint Helena County, La., Jan. 21.

"Please do not think I wish to criticise John Lovell in his article, January Gleanings, on 'Bird Flowers Often Listed as Honey Plants.' I read the article with much interest. Yet I think he is in error when he states that the only humming bird in the United States is the ruby-throated. We have no less than 16 species in the United States. The ruby-throated may rule supreme east of the Mississippi river, but there are more than a dozen others that breed in California, Arizona, New Mexico and Texas. . . . Do the birds get some honey from the 'bird flowers?' Last summer while the summer bee school was held in Dalton we went over the very fine gardens of Hon. W. Murray Crane's estate. The gardener, Herman Schmeiske, a man that it does one good to meet, showed us how the bumblebees gnawed into the cups of the "bird flowers" to get at the sweet secretion. The honeybees, far more numerous, would drink a "lion's share" of the nectar. I have seen the corolla opened, but do not know to what extent my bees work on such flowers."—Walter H. Leonard, Bristol County, Mass., Jan. 27.

QUESTION.—I have a ranch in the foothills of Nevada County, in which I am growing several thousand acidulous fruit trees, 80 per cent pears, the balance apples, peaches, plums, cherries, etc. How many hives of bees would you recommend for each thousand of such trees?

New York.

John N. Blair.

Answer.—The necessity of a large number of bees for the pollination of fruit trees is imperative, as may be clearly seen, when it is pointed out that the number of bees visiting the trees during the blooming period is more than 10 times as great as that of other insects. Most varieties of pears, and many of the apples and other fruits are self-sterile and are therefore placed in alternation in order to insure proper fertilization. When so arranged one colony per acre for an orchard of full grown trees would be sufficient, providing the weather was warm. But if a cold snap should occur at the time of fruit bloom, the bees would fly but a short distance, and several times as many colonies would then be a decided disadvantage. Some authorities on this subject plead for five colonies to the acre, saying that on the occurrence of unfavorable conditions, safety lies in the maximum number.

Question.—If in the first week of May, I divided a 10-frame colony into three, and filled the rest of the hive out with the full sheets of foundation, feeding them well, and giving each one a laying queen, would they store any surplus of honey this year and when would they become full colonies?

New York.

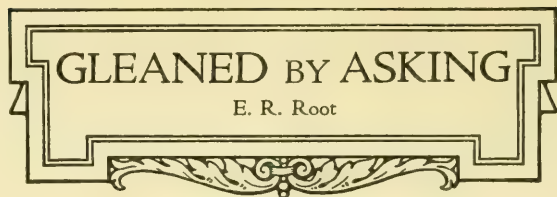
Evan Jones.

Answer.—If your heavy honeyflow does not begin before the middle of June, then by dividing your colony into two early in May and by feeding them for about thirty days, according to the Alexander plan of increase, you may be able to start the season with two good colonies instead of one, and therefore will increase your honey crop. If you divide the colony into three instead of two, you would still be able to obtain good colonies, but, of course, would decrease your honey crop accordingly. In some seasons it might result in the three colonies only obtaining enough honey to winter them and no surplus at all. In a good season they would probably store a little in excess of their needs.

Question.—I looked over an out-apiary Feb. 7, to be sure all had honey. I found the bees altogether too active for that time of year. All had brood as "large as a big hand," and from that up to four frames of brood in several strong colonies. In these colonies I found what looked like uncapped newly-stored honey in the super frames just above the brood. As there was, of course, no honey coming in, it must be that the bees took the thick honey, diluted it with water, and stored it where it will be handy to feed the brood. I never saw it done before. California.

Dr. Warren B. Davis.

Answer.—We fear the above inference is hardly justified. That bees would dilute thick



E. R. Root

honey with water and then move it over next to the brood, we do not credit. Doubtless what actually happened was that the bees were getting a small flow from

willow or some other early source.

Question.—Have you any information in regard to whether white or yellow sweet clover is preferable for honey production?

Ohio.

M. F. Cline.

Answer.—The white biennial (*melilotus alba*), and the large yellow biennial (*melilotus officinalis*), are both good honey plants. The latter, however, should not be confused with the small yellow annual (*melilotus indica*), which is usually considered of small value. The large yellow sweet clover blossoms much sooner than the white, usually two or three weeks earlier, this difference in time depending upon the locality. It may thus be seen that in many localities this variety of yellow sweet clover is quite invaluable since it so nicely fills in the gap between fruit bloom and the main honey flow, thus encouraging continuous brood rearing just at the time of year when it is most needed.

Questions.—(1) Would it be a good plan to put pound packages of bees in hives from which the bees have been winter killed? (2) What size of package would be necessary in order to have a strong colony by June?

Connecticut.

Joseph Langhammer.

Answer.—(1) If the colonies were not diseased and simply died because of the extreme cold, their frames would be all right to give to other colonies, but we would hardly like to give such combs to pound packages of bees, since such a nucleus would be so small. We would consider it much better to give the combs of dead bees to good, strong colonies to clean out, after which they could be used in the way that you suggest. (2) In order to have strong colonies by June, it will be necessary to buy the packages early. If one or preferably two-pound packages are purchased in April and each pound of bees fed slowly with about one-half cupful of sugar syrup a day, they may be built up into strong enough colonies to gather honey by June.

Question.—I should like to run my thirty colonies on the let-alone plan as far as I can and get a crop of honey. In the beginners' lessons in Gleanings last year, you say add another extracting body early, then about a week after the honey flow starts put the queen in the lower story with an excluder between. Now won't this colony have to be looked over to keep it from swarming? What I want is to get along without going thru them every week and then not see some of my best swarms soar away to the woods.

New York.

N. C. Davis.

Answer.—You seem to doubt whether the plan given last season in the "Beginners' Lessons" would work well as a let-alone plan. Well, so do we. In order to be certain that the bees will not swarm, it will be necessary

to look them over every seven or eight days. The let-alone plan is interesting simply as a freak plan that may have succeeded in a few rare instances. But under present conditions, when the health of each colony of bees is so important and the production of every possible pound of honey so imperative, we believe the practice is not only unwise but decidedly pernicious. See Allen Latham's own statement in this issue of Gleanings.

Question.—What is your opinion of E. W. Alexander's plan of taking the bees out after night?

Indiana.

H. W. Suhre.

Answers.—If the bees are quiet and in good condition, then they may be removed according to E. W. Alexander's plan, that is, taken out at night, at a time when they will be unable to have a flight for several days. However, if the bees show any signs of dysentery or seem uneasy, it would be better to remove them on a warm, sunshiny day such that they may fly immediately. The colonies should all be removed at the same time, and, the entrances left contracted.

Question.—At what date do bees begin brood-rearing in cellars or outside winter cases?

Wisconsin.

Elias Fox.

Answer.—If bees are given candy or for any other reason become disturbed and therefore unusually active, they may begin brood-rearing any time of the year, but normally not before March or April, in the Northern States. If brood-rearing starts before this, it is apt to cause dysentery, the occurrence of which at so early a date usually results in the loss of the colony. Some expert beekeepers by unusually early brood-rearing have been able to start the spring with quite large colonies, but for the ordinary beekeeper the practice is attended with a good deal of risk.

Question.—If combs that are left over winter have some candied honey in them, will the bees clean this candy out or will they leave it as it is?

Oregon.

J. A. Pryor.

Answer.—If there is no other honey present, the bees will use the candied honey, but during the process will tear the combs and waste much of the honey. When feeding such combs of honey it will be found a great help to heat them. They should be uncapped, dipped in hot water, and placed in the hives while wet. If they are badly candied, then after dipping, the surface should be combed over with a stiff metal brush. But even with this provision there will be quite a little waste.

Question.—(1) How is a beginner to know when the bees have eaten what they have in the hive and are starving to death? (2) I want to introduce a new Italian queen this spring. In killing the old queen should I do so a week or so before I introduce the new queen? (3) And how shall I order ahead to get the queen here at the right time?

Michigan.

H. E. Huey.

Answer.—(1) Usually we tell if a colony is running short by the weight of the hives. Of course, the beginner might not know whether a colony was short or not by merely lifting it. He can tell, however, by looking down between the combs and lifting out some of them. If the combs are dry and without

any stores in them except in a few scattered places where the bees are, it may reasonably be assumed that the bees are on the verge of starvation and should be fed, either by giving them candy or combs from some other colony that has perhaps died during the winter. Toward the last of this month, sugar syrup could be fed with safety. (2) If queens are introduced according to the directions sent with them, they may be introduced at the same time the old queen is removed. (3) There is no particular advantage in having the old queen removed several days ahead of time. In fact, it is a great disadvantage, especially so if the queen ordered should not arrive until a week or ten days after the colony had been dequeened.

Question.—Upon examining my colony recently I found all eight frames full to the brim and all capped, not a single empty cell. Could it be possible that they have a queen and the honey has crowded out the brood so she cannot lay; and, if I spaced in a few new frames of foundation, she would lay when they are drawn out?

H. P. Dixon.

California.

Answer.—The condition you describe is quite unusual, whether the cells are filled with honey, or with honey and brood. In either case, it is very seldom that all of the cells are capped. Since you are a beginner, we are wondering if you may not have confused the capped cells of honey with the capped cells of brood. The cappings over the honey are white, bluish white or yellowish white, rather irregular, and flattened somewhat. Cappings over the brood are composed of wax and fibrous substances, are light or dark brown, depending upon the age of the comb, and are rather smooth and convex. Of course if you find both of these kinds of cappings, then you will know that there must be a queen present.

Question.—I have about 50 empty hives that I want to fill with bees in the spring. How could I fill by dividing my 10 colonies. My idea is not to raise any surplus, but to increase my number of colonies as much as possible.

C. F. Hill.

California.

Answer.—In a good season, by continued feeding and careful attention, ten colonies may be increased to 50 but ordinarily no greater increase than to 30 would be advisable, for in order to withstand the winter, all should be good, strong colonies in the fall. During the present shortage of sweets, too much increase should not be attempted, at the sacrifice of the honey crop.

Questions.—(1) What do you consider the most successful treatment for European foul brood? (2) Please give the best method for introducing queens.

California.

Fred Armstrong.

Answers.—(1) In the treatment of European foul brood some of our best authorities, including Dr. C. C. Miller and S. D. House, believe that dequeening for a period of only 10 days, and introducing a vigorous strain of Italian bees will cure in the great majority of cases. In the case of black bees or dark hybrids we would recommend a queenless period of 20 days. Before dequeening it is very important to make the colonies

strong by uniting or giving hatching brood. It is not necessary to melt up the combs or otherwise treat the colonies or hives as in the case of American foul brood. Cells from a vigorous strain of Italians can be given immediately after dequeening, as it will be ten days before the queen will lay. (2) The method given with the queen-cages sent out with the queens is generally successful for introducing. The smoke method as recommended by A. C. Miller also gives excellent results. But beginners sometimes fail in applying it properly; hence we recommend the cage method.

Questions.—(1) I have an opportunity to buy a small apiary of about 70 colonies of bees in rather good hives. What do you think is a fair price? (2) A great part of the time, I shall be on the road, and therefore unable to look after the bees. Would it be profitable to hire a man who understands them, to work on the farm and take care of my colonies? What wages should such a man receive? (3) Do you think it would be profitable for me to buy these bees or would it be a better plan to buy bees by the pound?
Russell T. Spencer.
Ohio.

Answer.—(1) Without having seen the bees or hives, it is very difficult to state a fair price for them. A colony will be worth anywhere from \$5.00 to \$10.00, altho all will depend upon whether the hives are modern, standard ones, upon the strain of bees, age of queens, the amount of drone comb, and whether the combs are criss-crossed. In buying, one should be certain the bees are not diseased. In general, we never advise beginners to start with a large number of colonies. It is far better to begin with two or three, and then gradually increase to the desired number. (2) Altho away from home so great a share of the time, it would still be possible to manage the bees yourself, if you could be at home one day in the week. We do not think that hiring another man to take care of the few colonies would prove satisfactory, besides we believe that you would enjoy the work yourself. As to wages, we cannot answer that question, so much depends upon the locality and the man himself. (3) We believe that the best plan would be to buy two or three entire colonies or else to buy three-pound packages.

ANSWERS BY C. C. MILLER.

Questions.—(1) What is the best way to transfer packages of bees to hives? (2) To help brood-rearing, had I not better pack the hives until the weather gets quite warm? (3) Do you use granulated sugar or brown sugar for syrup? (4) I have full sheets of foundation in Langstroth wired frames. I wish to increase as fast as possible with safety. Shall I be able to obtain increase by buying two-pound packages of bees, purchased not later than July 15? (5) What do you think of taking the queens away about June 15 so as to enable the full force of bees to gather honey, instead of a lot of them wasting their time feeding brood that will never be of any use to the beekeeper? (6) For the week or ten days that the queens are removed, why not use them in starting new colonies?
F. O. Donnell.
Minnesota.

Answers.—(1) Something depends upon whether or not you have at least one frame

of brood to give the bees. If you have not, then open the package sufficiently to dump out the whole of the bees at once. But it is very much better to have the brood. In that case no such large opening is needed, and you can trust to the bees to come out of their own accord. Put your frame or frames of bees in the hive at one side, set the package of bees in the hive beside the brood, with the opening toward the brood, cover up and let the bees take their time to come out. If there is not room in the hive for the package, set the package over the frames, opening downward, and set an empty hive-body over. (2) Yes, the packing will help if it is cold, but it's not very advisable to begin operations till it is pretty warm. (3) Only granulated for winter; at other times it doesn't matter. (4) Yes, if the season is good. If the season is poor you can partly make up for it by feeding. (5) Theoretically it looks like a fine scheme. Practically, at least in my locality, it has never seemed to be advisable to stop the queen's laying except when helpful to keep down swarming. (6) At any time when the queen is temporarily removed from her colony, it is well for her to be laying in a nucleus.

Questions.—(1) Would you advise the purchase of double-walled hives for this part of the country? I live in Illinois and have no bee-cellar. (2) Which is the better size section box to use, the 4 x 5 x 1½ or the 4¼ x 4¼ x 1½? (3) Would you advise me to use the shallow frames or the full depth frames for extracted honey? If I used the 4 x 5 x 1½ section super and the shallow frames, the super bodies would be interchangeable. (4) Should I use starters or full sheets of foundation for section honey boxes? If so what style of a foundation fastener is the best for fastening the full sheets? (5) I have noticed in Gleanings that people having three-banded and leather colored Italians for sale each claims their's is the better. Which do you think is the better for me to buy? I intend to buy queens for divided colonies.
Gordon Bell.

Illinois.

Answers.—(1) I think I should prefer single-walled hives, using outside protection for winter. (2) I prefer the latter, as do most beekeepers. (3) There are advantages and disadvantages, either way. If you are going to keep only a few colonies, it may be well to have only full-depth frames; with a large number it may be better to have shallow frames. A good plan may be to try part of your colonies with shallow frames now, and that will help you to decide which you prefer to use when you increase your colonies. There would be some advantage, of course, in having interchangeable supplies. (4) Use full sheets, by all means; it will be money in your pocket. I am not familiar with all the fasteners, but the Daisy does excellent work. (5) I think the majority of beekeepers prefer the leather colored three-banders, and so do I.

Question.—Can I use paraffine for fastening foundation in frames?
Clyde L. Moore.
Pennsylvania.

Answer.—Paraffine melts at so low a temperature that we should much prefer to use beeswax for fastening foundation in frames.

IN our introductory talk of last month, we spoke of the essential outfit and also the smallest possible model equipment for one making a start with one colony. For purposes of manipulation and comparison some may prefer to begin with three or four colonies. If so, the suggested outfit will need to be increased accordingly. Also if one objects to heavy lifting and prefers shallow supers to the deep ones, twice as many supers will be needed.

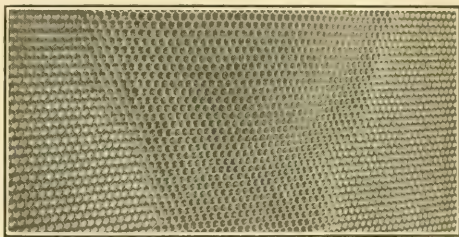
The hive which we are recommending is a plain, dovetailed box without top or bottom. It is the lowest story of the hive and rests immediately upon the floor-board, which has at the front an entrance contractor for regulating the size of the entrance. At each upper

TALKS TO BEGINNERS

By the Editor

eral horizontal lengths of fine wire, are full sheets of foundation, or beeswax stamped with an impression of the natural base and initial walls of honeycomb. Giv-

ing the bees these sheets of foundation, insures good straight worker comb centrally placed in the frames. During the honey flow new wax is added to these shallow walls and



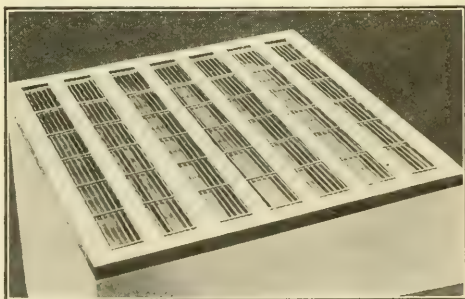
A sheet of comb foundation, the middle part of which the bees have begun drawing out into comb.

thus the foundation is built out into comb for storing honey and raising young bees.

This lower hive is called the brood chamber because here all the young bees are raised, the queen being allowed to lay eggs only in the combs of this story. To prevent the queen from going above, a queen excluder is placed over the brood chamber.

The excluder is an arrangement made of perforated zinc, or of wire rods, which allows the free passage of workers but excludes the queen because of her larger size. This prevents the queen from laying eggs in the combs above, which are intended only for surplus honey.

Above the queen excluder the super is placed as soon as the bees seem to need room. The super may be exactly like the



Queen-excluder separating brood-chamber from supers, prevents queen from going into supers and raising brood in the extracting-combs.

The smallest practical outfit for extracted honey production: 1 ten-frame hive body, wired frames with sheets of comb foundation; 2 ten-frame supers same as hive body; 1 floor board; 1 inner cover; 1 outer cover; 1 bee brush; 1 No. 2 bee-veil; 1 bee-smoker; 1 hive-tool. We suggest that the outfit be tripled.

end of this box or hive is a metal support, or rabbet, holding suspended lengthwise of the body 10 movable "Langstroth" frames, $9\frac{1}{4}$ by $17\frac{1}{2}$ inches in size.

Inside of these frames attached to the top bar by means of wax and supported by sev-

hive body or may be shallower. It is used entirely for the storing of surplus honey, that is, honey in excess of the colony's needs for the coming winter.

The thin cleated inner cover is placed over

the super, or, early in the season, when no super is used, it is placed just above the brood chamber; and over all is placed the heavier outer cover.

Since we are attempting to describe a very cheap outfit, no mention has been made of an alighting board, but, of course, the hive bottom should rest on some support to keep it from contact with the ground, and a board sloping up to the entrance is quite a help to the bees as they return laden with honey.

The brood chamber itself furnishes the best opportunity for studying the bees since in this one apartment all the activities of the hive are conducted. Here will be found the three kinds of bees—queen, workers, and



Queen, drone and worker.

drones. Each is raised in its own peculiar kind of cell, and each has its own special work to perform.

The smallest bees in the hive are undeveloped females, known as workers. Of the inmates of the hive, these make up the great majority, there being from 25,000 to 75,000 or more in each colony. Their development from the depositing of the egg to the adult bee requires about 21 days. When first hatched, their bodies are covered with soft hair which gradually wears off as they become older.

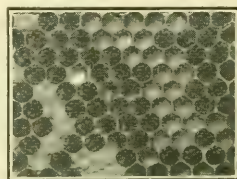
With the exception of the first day or two, their first two weeks are spent as nurse bees, in which capacity they partially digest pollen and honey and feed to the larvæ and queen, and also build comb and do other work about the interior of the hive. After this, they

begin gathering honey from the fields, leaving the house work to the young emerging bees. Altho workers may live over six months, yet during the busy season their length of life is quite short, only six or seven weeks.

Among the workers may often be noticed a few large, blunt, clumsy-looking bees. These are the male bees or drones, and are developed in 24 days from unfertilized eggs which the queen is able to lay at will. The drones are not as long as the queen, but are much stouter than either workers or queen. They have no power to sting or to gather honey, their sole function being the fertilization of the queen.

The largest, longest bee in the hive is the queen. Her plumpness varies somewhat, being greatest at the height of her egg laying. After she has become mated she has a very sedate and dignified bearing and may be easily distinguished by this characteristic. A dozen or so of the bees nearest the queen often form a little circle, facing toward her and caressing her with their antennæ.

The queen cell in which the queen is raised is in shape and size somewhat like a peanut, or long slender acorn, with the smaller end hanging downward. As soon as the tiny egg in the queen cell hatches (three days), the nurse bees feed it "royal jelly," which is a concentrated, partially digested mixture

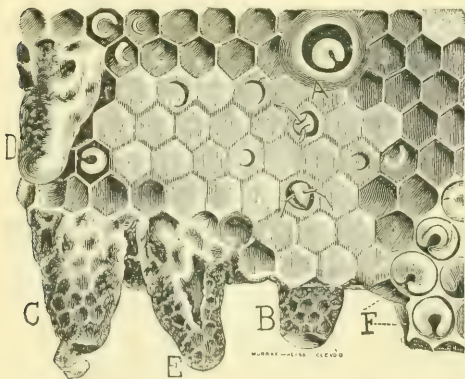


Capped brood in lower left corner, pollen above and at the right.

of honey and pollen. After feeding six days, the cell is closed, or "sealed," and on the 16th day from the laying of the egg, the queen bites her way thru her self-spun cocoon and emerges. After taking a little honey she tries to kill any queen present, and either she or the bees destroy all capped queen cells. In about six days she takes her wedding flight and a day or two later begins laying. During the height of the season she may easily lay 3,000 eggs a day. Queens may live four or five years, but are only at their best the first two years.

When glancing thru the brood chamber, around the outside of the combs will be noticed cells about 1/5 inch in diameter, whose coverings, or cappings, are of white, yellow or bluish-white wax, and seem somewhat flattened in appearance. These cells contain honey which has been placed in a convenient position for feeding the young brood.

Just inside of this honey and toward the center of the comb may be noticed cells not capped over but containing a yellow, red, green, or perhaps dark brown substance. This is pollen which the bees have obtained from

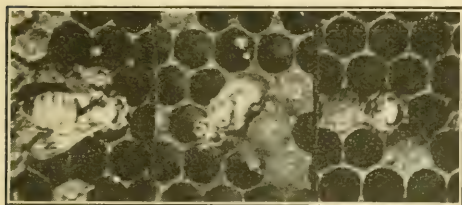


At the center, hatching brood; above and at the right, cells containing larvæ in different stages of development; F, larvæ nearly ready to seal. B, C, D, and E, queen cells; B, partially built; C, one from which queen has hatched; D, capped cell; E, one with side torn down in order to kill contained queen.

blossoms and carried home packed in pellets on their rear legs. This pollen, or "bee bread," as it is sometimes called, altho used by the bees themselves, is gathered especially for feeding the young larvæ.

Here and there, at the corners or edges of the combs may be found drone cells which are regular in shape and slightly larger than the worker cells, there being about four cells to the inch.

Toward the middle of some of the combs will be found cells having light to dark-brown and slightly convex cappings made of



Bees gnawing thru the cappings and emerging from their cells.

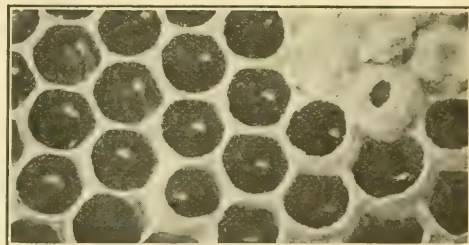
wax and fibrous material. Such cells contain the sealed brood; whether drone or worker may be determined by the size of the cells. Near this sealed brood will also be found unsealed brood, some cells containing tiny, elongated eggs of about the same diameter as a pin, others containing what appears to be pearl white grubs closely curled up in the cells. The latter are larvæ in various stages of development.

When given frames of foundation, the bees begin building comb and drawing out the foundation, providing there is honey or sugar syrup coming in. To produce each pound of wax used in comb building, it is necessary

for the bees to consume from 5 to 20 pounds of honey. For this reason foundation should never be given except when there is either a natural or an artificial flow, for otherwise it will be gnawed by the bees and probably ruined.

After feeding on these incoming stores, a secretion called wax issues from the wax glands and hardens into white scales, which may often be seen on the under side of the bee's abdomen. This wax is then transferred to the mandibles where it is mixed until it becomes pliable enough to use for comb building. Altho the new combs are very light in color, after several years of use in brood rearing, they become dark, almost black, from the thousands of bees continually tramping over them and also because of the many layers of cocoons which line the cell walls. These cocoons so add to the toughness of the combs that they make the old combs even more valuable than new ones.

In our next lesson we shall discuss the different methods of obtaining bees and also the ways of getting them into the new hives.



Unsealed, partially sealed, and fully sealed honey, which may be in either worker or drone cell. Capillary attraction prevents the unsealed honey from running out.



Podolnho Garcia, Matanzas, Cuba, styles himself a beginner; but he has 200 colonies, and he secured an average crop per colony of 15 to 16 gallons of honey and three pounds of wax.

FOR many years I have read and admired the articles by L. W. Lighty in the *National Stockman and Farmer*; but it never even occurred to me that he was a friend of mine or even knew of my existence for that matter. I had an impression that he was in some way connected with the Department of Agriculture or with the farmers' institutes of the great state of Pennsylvania; but I did not suppose that such a busy man as he had time to bother with a bee-journal, much less to read my Home papers. While I think of it, one of the pleasant things all my life, and especially late years, is to come across somebody who has been a warm friend of mine for years past, and I did not know it nor even dream of it. Now, I value the kind letter below *ever so much more* because friend Lighty takes me to task, and points out to me some of my shortcomings. Here is the letter, without any further preface:

My Good Old Friend Root:—I have read your writings for more than thirty years because I think it worth while. This is not true of most stuff written. May I say a word and give a hint? You wish to get after the whisky business with the law, the club, the bars, and sword. I have a friend in Pennsylvania who believes in ruling by love. He has infinite faith in the promise given in Matt. 48:19. I know many cases where the husband was a drunkard, a sot, and terribly abusive when drunk. Home was hell when the husband was drunk. The wife went to this man of faith and asked that he heal this husband. I know quite a number who were thus healed and are splendid men who will not touch a drop of liquor. This man of faith is not some faddist, but a simple old Quaker farmer. His lessons (demonstrations) have been of infinite value to me.

The trouble with the world today is a lack of faith. The sword is to make the world "safe" and humanity humane. I really wish, my friend, you would give us a Home talk on the 19th verse of the 18th chapter of Matthew. You might also add Mark 7:30; then Mark 16:18 would also go with these. Brother Root, we are woefully lacking in faith. You so often, in your health talks, quote the authorities which change their methods annually. The wise and prudent are poor leaders, but faith reveals the truth, see Matt. 11:25 and Luke 10:21. I do not wish to pester you; but your words say you are not growing in faith.

As Advisor for the Department, I visited the institutional farms of the state and Reformatory No. 1, where the juveniles are sent, instead of to the regular prison. After going over the farm I went to counsel with the superintendent. He was a severely good man. He had faith in nobody, not even in himself. He was in an office with three heavy locks



In that hour Jesus rejoiced in spirit, and said, I thank thee, O Father, Lord of heaven and earth, that thou hast hid these things from the wise and prudent, and hast revealed them unto babes; even so, Father, for so it seemed good in thy sight.—
LUKE 10:21.

bolted between him and the outside. Locks and bolts and high formidable walls and bars were everywhere. When the boys went out to work, a man (well armed) took charge of six or eight boys. When one watcher took his eyes off his gang to show me something he called loudly to another keeper, "Watch my boys a few minutes," in the hearing of strangers and every one.

What boy would not try to "make good" after such a challenge?

Now I go to No. 2, at the other end of the state. I walk into the office of the superintendent and see no bars, lock, nor key. I meet a man with a wonderful smile—a man with infinite faith in humanity, having the same kind of "criminals" in his charge. They are all running "loose" over the place. Silent rules govern the place. Perfect order is everywhere. No one watches visibly anywhere. Every boy and girl (there are girls too) are on their honor. We go out over the farm, and see a tip of the cap and a salute for the superintendent on all sides, and from the superintendent a *kind word* to all as we go along. He even stops by a little group to inquire about a little colored girl lately sent in. Why, this doctor *loved* those "criminals" and they love him, and you could not bribe them to do wrong toward him. Here is where I saw with my eyes where faith "removed mountains."

L. W. LIGHTY.

East Berlin, Pa.

May I quote a little from the above? "The words say you are not growing in faith." I have added italics in the above quotation. Why, my good friend Lighty, if you have read my writings for more than thirty years you certainly remember the "fracas" with the boys climbing on the back of my automobile. I consulted the marshal and the mayor of the town, and they gave the boys a sound talking-to, telling them what would happen, etc.; but that, as it seemed to me, only had the effect of making the fun, as the boys called it, still *more* "interesting." But I finally began to see something along the line of what friend Lighty suggests. Instead of striking back I stopped and waited for the boys, and talked with them pleasantly and with a smiling face. At one time I told them to pile on all over my machine and see how many it would pull, and took the time to give them all, a little ride, even if I was in a hurry. That ended the trouble. I do not know but I had better add right here that I was considerably helped in the matter by the advice of the superintendent of the Sunday-school; and I think I have on past pages suggested that if *all* humanity could unite in returning good for

evil, we should soon see an end of the wicked war that now involves the world.

This Home paper is marked to come out in March, 1918—that is, if I do not send anything else to take its place; but I am dictating it on this last day of October, 1917. When this comes before your eyes, dear reader, I most earnestly hope and pray that no such “wicked war” as now oppresses not only the United States but the whole wide world will prevail. I do not exactly understand what friend Lighty would suggest; but he means, without question, that we should, each and all, strive for that spiritual elevation where we can honestly follow the Master where he said, “Love your enemies; do good to them that hate you; pray for them that spitefully use you and persecute you.” Now, the above works splendidly, as we all know, among friends and neighbors, and it ought to work splendidly for the whole nation and for the whole wide world. But as it appears to me, with the present state of affairs, taking conditions as they are, we must have *law* and *laws*; and if we have laws we must have *law enforcement*; and just now we have no other means at hand to enforce law than to arrest criminals *by force*. A

policeman must have firearms in order that he may stop criminals and arrest them; and when policemen are overcome, as they have been several times lately in our great cities, there must be a state militia backing them. If this state militia fails in its efforts to overcome thugs and criminals, then federal troops must be called on. What is to become of our great republic, “the land of the free and the home of the brave,” if the powers of darkness are not held in check? And I think that you, friend Lighty, will agree with me that the greatest enemy—yes, the supreme enemy—of law and order is the liquor business. When our nation shall have cut off its partnership with this piece of iniquity, then will our prayers be heard and answered, and God’s kingdom shall come and his will be done on earth as it is in heaven.

I have before suggested that that beautiful little text, “If I cherish iniquity in my heart the Lord will not hear me,” applies to nations as well as individuals. May God help us to learn the lesson that he is striving to teach us, perhaps by letting this wicked war go on until we are punished for consenting to be *yoked with iniquity*.



HIGH-PRESSURE GARDENING

“WHATSOEVER A MAN SOWETH, THAT ALSO SHALL HE REAP.”

These articles on “High Pressure Gardening,” during years past, have, no doubt, been very helpful to many, as I have gathered from abundant testimony; but I feel sure I have something for you, dear friends, this morning, that may, thru a kind Providence, eclipse them all.

I have been reading about the measures our nation is now taking to have *better seed corn*, the world over, I hope and pray. Well, it rejoices my heart to read about the tests our “school children” (God bless them *and their teachers*) are making—a kind of “schooling” that to me seems far ahead of Greek and Latin (to say nothing of *German*, just now). Well, what Hoover and Garfield are doing to have a hill of corn on every spot where a hill *should be*, I am doing; and I am teaching how to have a hill of *potatoes* on every spot of prepared soil, where a hill of potatoes was intended to be.

Get your potatoes, a kind that has proved a success in your locality, and cut them to one eye, on the Terry plan. Leave two eyes

as you choose; but I have had splendid sprouts when I could not discover *any* eye. It is a very good plan to have a pretty fair sized piece of potato to each eye, but this winter I have had some immense potato sprouts, and later, vines, from a piece of potato not larger than a nickel, and not much thicker than a potato paring. It all depends on the soil in your hot-bed or cold-frame. When this comes before your eyes, you likely will not need any hot-bed or cold-frame either. Get a spot where you can get as much sun as possible, and have it, at the same time, sheltered from north and west winds. Have plenty of water near by. A spot, a rod long and six feet wide, will do for most of you, probably. Spade, hoe and rake this ground until it is fine and mellow for a foot deep, or more. Now comes the most important part. Make the ground *rich*. Use fine, old, well-rotted manure, plenty of it, or whatever you know of, that gives crops in your locality. In our beds here, we use a painful of fertilizer, especially for potatoes, and another of goat or sheep manure. Work it in very thoroly. Shovel

the soil back, level it off and place your one-eye pieces of potato about two or three inches apart. When nicely placed, shovel about two inches of soil over all. (I forgot to say that this bed must be tile-drained, or good drainage secured in some other way.) While the bed should be kept pretty wet, there must be no standing water during heavy rains. Get all the sunshine on this bed possible; if there is anything in the way that shades, either morning or evening, get it out of the way, if possible. If the nights are at all cool, cover the bed with empty sacks as soon as the sun is off at night; but be sure they are off as soon as the sun can get on the bed in the morning.

Will every piece of potato produce a good, strong shoot with this treatment? Of course, it won't. And it is just here, where my great invention comes in, that is going to save the world *millions*. When your potato bed is pretty well covered with green leaves, run up a wheelbarrow, with light, wooden trays, and lift out the plants, potato and all, with not only a great bunch of branching roots, but also with a good handful of this rich soil. The bed should have been thoroly wetted an hour or two before you commence lifting the plants. To have them come up easily, push a flat-bladed spade down under the roots; then pry down on the handle and this will loosen the whole "sod" of potatoes and roots, so you can carefully separate them. Before doing all this, your potato ground is to have been well prepared and furrowed out. If you can run a hand-cultivator thru each furrow just before setting the plants, it is better.

Now to go back a little to the "great invention." Every piece of potato that has not made a good plant, is to be put back in the bed, and taken up at a later date. These "put-back" pieces often make the very best plants.

Now a word about having the hills just so far apart. We have the furrows 30 inches apart, and aim to have a potato hill every 16 inches. Well, my good helper Wesley didn't seem to have the faculty of guessing at 16 inches, so I gave him a 4-foot lath, with notches cut at the 16-in. point. With this near by, he gets them almost exact.

What do we secure with all this "fuss and bother"? A lot of things. Not only is there a good, strong plant and no missing hills, but also you have a yield of great, beautiful potatoes that command a big price, when there are often no new potatoes on the market at all. One who has not tried it can scarcely realize the difference. Just now the world is beginning to recognize the great importance of giving the young plant (or

animal) a good, healthy start during the first period of its existence. Visitors are coming every day and you ought to hear their exclamations of surprise. One lady begged for some potato *leaves*, as she said she never saw, or heard of, anything like it.

After showing some friends a beautiful bed of potatoes, that had just been cultivated and hoed, I made the remark that they had been planted just *one week*. The crowd turned and stared at me just about as people did 40 years ago when I announced I had taken "a barrel of honey" from one beehive in one summer.

Some of you may think I plant potatoes pretty close. Well, I have found it an advantage here to have the vines cover and shade the ground from the hot sun as soon as possible. By the way, I have grown Red Triumph potatoes on this same ground now for six or seven years. Not only that, but my crops get better and better, by planting velvet beans after the potatoes and spading them under every fall.

A year ago, I sent to our Florida Experiment Station, and also to our Ohio Station, an account of my potato work, similar to the above; but neither seemed to think very much of it. Perhaps after a while they will both "sit up and take notice."

P. S. I use about one-half ton of special potato fertilizer per acre.

THE WIND-ELECTRIC APPARATUS DOWN IN FLORIDA AND ITS PROGRESS UP TO DATE.

So many are interested in the matter of "harnessing the wind" so as to have it pull our automobiles, do our house-work, etc., that we print below some of A. I. Root's daily reports of progress, as he has jotted them down on his letters written to Medina:

Feb. 16.—We are still waiting for Marukoski to boss raising the heavy wooden tower.

Feb. 20.—Business matters hindered the inventor, Mr. Marukoski from making his trip to Florida so our machinery is not yet set up. The wood tower is completed and nicely painted, but not yet raised on its feet. Today is Feb. 20, and Mr. M. is expected on the 25th.

Feb. 22.—Better send me one more \$100, as we are going to set up the windmill next week. I expect I have been using a lot of money, but I hope a part of it has been "treasures laid up in heaven, where thieves do not break thru and steal."

Mar. 4.—Our generator is finally at hand and the switch board is to come by express. Our troubles for the present at least mostly over. Marukoski is to be here tomorrow. The generator weighs 400 pounds so I think

it must be a low voltage, altho they have never told me direct, I think that will please me best. We shall not want to send current any distance.

March 6.—We expect Marukoski tonight. It is pretty hot here now and no rain.

March 7.—Marukoski is here, and a *great big man* he is, physically, mentally, and I hope, spiritually. He is away up on electricity, is prominent in the Y. M. C. A., and it is a great privilege to know him.

March 9.—Mill is running, and takes so little wind. A scrap of paper dropped from the tower fell almost straight down to the ground but the mill was run by even so light a wind as was then blowing. Roller bearings and everything balanced, like a fine steam engine, is the secret of it.

March 11.—At 2:30 p. m. on this 11th day of March, our electric windmill started whirling, and is now, while I write, charging the 28-exide storage batteries on my electric automobile. Providentially we had quite a brisk wind when we were ready for the test, altho it was quite gusty and is almost constantly changing direction. The result is that the ammeter shows 5 amperes, then 10, and once in a while goes up to 20; but this uneven rule seems to store the battery all right. The automatic switch board is to be installed later. May the Lord be praised for our success so far! The great 14-foot wheel, with the belt on its outer rim, makes at present only about 18 revolutions per minute, and it runs so quietly on its roller and ball bearings that not a sound is heard even with your ear pressed against one of the timbers of the tower.

POTATOES AND BEES DOING FINELY.

My potatoes, all planted since the freezes (by the "hot-bed" method), are now (Feb. 20) covering the ground with their great, rank, green foliage in a way that gives promise of a wonderful crop. For a brief period every morning the bees are tumbling in loaded with honey, probably from the orange blossoms.

SELLING THE RED TRIUMPH POTATOES.

March 10.—Today we began digging some of the potatoes, which were not out of the ground so as to be injured seriously by the freezes during the winter. I took a half-peek basket to my good friend Burnet at the grocery store and asked him what he could pay for such.

"Mr. Root, what do you want for them?" I said, "I thought they ought to bring 35c."

"We couldn't make it," he replied.

"Well," said I, "you give me 30c, and sell them at 35c."

"All right," said he, "bring them along."

I went home and started Wesley to digging, while I sorted and placed them in baskets and ran them up town. I did not know it at the time, but it seems that on account of the bad weather there wasn't a *new potato* in Bradentown. They were grabbed up almost as fast as I could unload them, and every basket sold was carried around to let people see "the beautiful potatoes." One of the crowd said: "Why, Mr. Root, how is it possible you can grow such fine potatoes every year, at a time when nobody else has new potatoes of *any kind*?"

I replied: "My good friend, I have been trying to grow more and better potatoes, more or less, for full 70 years.

This year there are fewer small potatoes than ever before. The secret is the "single-eye" plan given the world by our lamented friend, T. B. Terry. Each potato hill, as a rule, is one great thrifty stalk, and the result is, all large fine potatoes.

After we had delivered 30 or 40 baskets, that were grabbed up almost as soon as unloaded, Mr. Alderman (one of the firm) said: "Mr. Root, we are sending a truck down to your place with some corn and middlings for your chickens, and I wish you would have a lot of potatoes ready, and, if possible, load up the truck with them."

Now, dear friends, when this reaches you, you can "get busy" and do something similar, right near, and in *your own home town*.

DASHEEN TUBERS FOR PLANTING.

In reply to many inquiries, you can get dasheens for planting of The Kilgore Seed Co., Plant City, Fla., and their seed catalog will give you a lot of information about everything that can be grown in Florida with profit. Dasheen will grow *anywhere*, but, of course, it doesn't come to full maturity away up north. As it is good food, however, at every stage of its growth, roots, leaves, and all, I think it pays to plant it. Send to the Agricultural Department at Washington, D. C., for pamphlet, if you want to know all about it.

IRON AGE

Farm, Garden and Orchard Tools

Answer the farmer's big questions:
How can I grow crops with less expense and labor? How can I grow fancy fruit at low cost? The

IRON AGE Barrel Sprayer

?



(horizontal) solves the spraying problem for the busy farmer. Can be used in any wagon, cart or sled. Reliable easy-working pump placed outside the barrel—prevents rusting all parts easy to reach. 100 to 125 pounds pressure with two nozzles. 50 and 100 gallon sizes. We make a full line of sprayers. Write today for our free booklet.

Barrel Sprayer

Bateman M'g Co., Box 20E, Grenloch, N.J.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeier & Arpe Co., 139 Franklin St., New York.

FOR SALE.—30 cases comb honey, mixed lot. What are we offered?

H. G. Quirin, Bellevue, Ohio.

40,000 lbs. of No. 1 clover honey; 7,500 lbs. of white aster honey; both of good color, fine flavor, and good body.

W. B. Wallin, Brooksville, Ky.

FOR SALE.—900 lbs. Orange blossom honey and 120 lbs. white clover at 18c cash with order.

James McKee, Riverside, Calif.

FOR SALE.—White Montana Honey in new sixty-pound cans. Twelve Dollars per can. Six pails, each ten pounds net per case, \$12.60. Six pails, each ten pounds gross, \$12.00 per case. Immediate shipment.

B. F. Smith, Jr. Fromberg, Mont.

HONEY AND WAX WANTED

Small lots of off-grade honey for baking purposes. C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

WANTED.—Comb and extracted honey.

J. E. Harris, Morristown, Tenn.

WANTED.—Honey and beeswax. Send sample and price.

C. S. Fryer, 386 Halsey St., Portland, Ore.

WANTED.—To buy a quantity of dark and amber honey for baking purposes.

A. G. Woodman Co., Grand Rapids, Mich.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.

Superior Honey Co., Ogden, Utah.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston.

M. V. Facey, Preston, Minn.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices.

A. L. Healy, Mayaguez, Porto Rico.

BASSWOOD AND EVERGREEN TREES.—Send for list. Hansen Nursery Co., Niles, Mich.

FOR SALE.—30 shallow extracting supers with drawn combs.

Oscar Carlson, Sandwich, Ill.

FOR SALE.—Two story 10-fr. hives in any quantity. Write Lock Box 202, Grand Rapids, Wis. 1002

FOR SALE.—West's cell protectors and cages at half price.

James McKee, Riverside, Calif.

FOR SALE.—Pure maple syrup in one-gallon cans at \$2.50 per gallon. Six gallons or more \$14.

The M. C. Silsbee Company, Avoca, N. Y.

Beekeepers, let us send you our catalog of hives, smokers, foundations, veils, etc. They are nice and cheap.

White Mfg. Co., Paris, Tex.

FOR SALE.—30 Danz. hives with drawn combs, and section supers. No disease.

C. T. Thompson, New Glasgow, Va.

Everybearing Strawberry plants, Progressive and Superb, by Mail, prepaid, \$1.00 per hundred.

R. H. Nortman, Black River Falls, Wisconsin.

FOR SALE.—One 6-in. foundation mill, in perfect condition; also one 400 chick Paradise Cyphers brooder, good as new, reasonable in price.

E. M. Shirk, Wheeling, W. Va.

Pennsylvania Distributors for Root Bee Supplies, save time and transportation expense on all standard hives, sections, etc., at catalog prices.

Prothero, Bailey & Goodwin, Dubois, Pa.

FOR SALE.—25 8-frame comb-honey supers for 4½ plain section with section-holders and fences, nearly new. Also roll of corrugated paper for shipping-cases.

R. D. Mills, Highland, Mich.

FOR SALE.—Used honey cases, 2 60-lb. cans good shape, 75c each; 5-lb. honey pails, new, \$9.50 per 100; also 1-lb. glass honey jars, \$5.90 per gross.

D. H. Welch, Racine, Wis.

NORTHWESTERN BEEKEEPERS.—Order Root's Supplies near home and save time and freight. Geo. F. Webster, Valley View Farm Apiary, Sioux Falls, S. Dakota.

WAR PASTE FOR LABELS COSTING LESS THAN A PENNY A PINT.—Send 25 cents for formula for paste for labels that will stick anywhere. Money refunded if not satisfactory.

Sunnyside Apiaries, Fromberg, Mont.

Southern beekeepers, save money on comb foundation. Send me your beeswax to be worked, for cash or on shares. Terms the lowest, and satisfaction guaranteed. Send for terms.

E. S. Robinson, Ft. Myers, Fla.

THE ROOT-CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—Honey extractor, solar wax-extractor, supers with Langstroth shallow frames and clean bright combs, frame-bucket, uncapping knife, wood-zinc honey-boards.

Evans E. Ewing, Rising Sun, Maryland.

FOR SALE.—Standard size dovetailed, ten-frame body filled with full drawn combs on Hoffman frames, built on full sheets of foundation and wired frames, \$2.00 each. Ideal supers to match full drawn combs, \$1.25 each. The Hyde Bee Co., Floresville, Texas.

FOR SALE.—Two typewriters. Latest improved Blickensdorfer in leather carrying case. Never used. Cost \$55. Price \$20. L. C. Smith & Bro., No. 2, second-hand but in good working order. Cost \$100. Price \$20.

L. W. Lighty, East Berlin, Pa.

FOR SALE.—One thousand bee hives with supers. Three-fourths dovetailed. Balance halved together at corners and nailed both ways. Hoffman frames thruout. We will guarantee them to be sound and free from disease. Will sell all or any part at about one-half what new hives will cost. Apply to

The Hyde Bee Co., Floresville, Tex.

WANTS AND EXCHANGES

WANTED.—50 to 200 colonies bees, preferably near home

H. G. Quirin, Bellevue, O.

WANTED.—20 colonies of bees, free from disease.

Henry Roorda, 10729 State St., Chicago, Ills.

WANTED.—4-fr. Novice extractor. Give description. Box 44, East Chatham, N. Y. 888

WANTED.—Extracting outfit in the north in good location. A. Carder, Ludlow, Ky.

WANTED.—Second-hand Cowan or Novice extractor. Must be cheap and in good condition. E. R. Sullivan, R. D. No. 2, Lorain, Ohio.

WANTED.—10 to 100 swarms of bees, not over 50 miles from Bellevue. N. B. Querin, Rt. No. 7, Bellevue, O.

PRINTING.—Will exchange printing for bees and fixtures. What have you, and what printing do you need? J. W. Rice, Fort Smith, Ark.

WANTED.—Colonies of bees in Eastern New York. Give style of hives and price asked. G. O'Connell, 467 42nd St., Brooklyn, N. Y.

Within 100 miles of Lake Champlain I am ready to buy or handle an apiary on shares for extracted honey. F. A. Allen, Philipsburg, Quebec.

WANTED.—300 colonies or less of bees—for cash and spring delivery—correspondence with full particulars solicited. A. W. Smith, Birmingham, Mich.

WANTED.—Full colonies of bees on Hoffman frames, Italian preferred, free from disease, near New York city. J. G., care of The A. I. Root Co., 139 Franklin St., New York City, N. Y.

WANTED.—Italian bees free from disease. F. O. B. Pasadena, Cal. Give complete information as to price, kind, condition, etc. G. Roger Williams, Pasadena, California, R. F. D. No. 2, Box 221.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slungum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

Will exchange my new "Long" Crispette machine for bees, preferably Italians, with 10 frame hives. My entire outfit for making this popcorn confection consists of 1 Crispette machine, 1 large rotary popper, 1 furnace, 1 copper kettle and all accessories. Value of entire outfit, \$220.00. Mr. Eakins of Springfield, Ills., made \$1,500.00 in 1 month with his machine. On account of poor health, I must remove to the country. For further information, address M. S. Swain, Trenton, Mich., P. O. Box 152.

AUTOMOBILE REPAIRS

AUTOMOBILE owners should subscribe for the **AUTOMOBILE DEALER AND REPAIRER**; 150-page illustrated monthly devoted exclusively to the care and repair of the car. The only magazine in the world devoted to the practical side of motoring. The "Trouble Department" contains five pages of numbered questions each month from car owners and repairmen which are answered by experts on gasoline-engine repairs. \$1 per year. 15 cents per copy. Canadian subscriptions \$1.50. Postals not answered. Charles D. Sherman, 107 Highland Court, Hartford, Conn.

POULTRY

S. C. Black Minorca eggs for hatching perfect beauties. Write M. Pelton, Alexander, N. Y.

FOR SALE.—Single comb Rhode Island Red hatching eggs, \$1 and \$2 per 15. My birds are bred from Chicago winners. C. R. Zimmerman, 115 W. Garfield Ave., Swanton, Ohio.

REAL ESTATE

FOR SALE.—Village home with plenty of fruit, fully equipped apiary. Write if interested. Clover Valley Apiary, N. H. Wilson, Deby, Vt.

A small California farm earns more money with less work. Raise the crops you know about—alfalfa, wheat, barley, etc.—also oranges, grapes, olives, and figs. Ideal for dairying, pigs, and chickens. No cold weather; rich soil; low prices; easy terms; good roads, schools and churches. Enjoy life here. New comers welcome. Write for our San Joaquin Valley, also Dairying and Poultry Raising illustrated folders free. C. L. Seagraves, Ind. Com. A. T. & S. F. Ry., 1927 Railway Exchange, Chicago.

SOUTHERN FARMERS ARE PROSPEROUS and contented. Favored by nature with mild climate, long growing season and abundant rainfall, fruit, poultry, stock, trucking, and general farming succeeds amazingly here. Little farms in Shenandoah Valley colony of Little Planters, \$250 and up, complete, on easy payments. Good near-by markets, excellent transportation, low freights. Full information on request. F. H. LaBaume, Agrl. Agt., N. & W. Ry., 246 N. & W. Bldg., Roanoke, Va.

Do you want a farm where largest profits are made? The South's great variety of crops and wonderfully productive climate makes it the most profitable farm section of America. It is the place for the lowest-cost meat production and dairy farming. It grows the largest variety of forage crops. Good lands, in good locations, as low as \$15 to \$25 an acre. Let us show you locations that will give the highest profits. Charles S. Chase, Gen. Immigration Agent, Room 27, Southern Railway System, Washington, D. C.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 Dewolf St., Vincennes, Ind.

When it's **GOLDEN** it's **PHELP'S**. Try one and you will be convinced. C. W. Phelps & Son.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Courtland St., New York.

FOR SALE.—Bees, queens, and honey in their season. H. G. Quirin, Bellevue, O.

Italian queens, and bees by the pound, for sale early. H. E. Graham, Gause, Texas.

Italian Bees and Queens; write for circular. Ira C. Smith, Dundee, Ore.

FOR SALE.—1918 Golden Italian queens; price list free. Write E. E. Lawrence, Doniphan, Mo.

When it's **GOLDEN** it's **PHELP'S**. Try one and be convinced. C. W. Phelps & Son, Binghamton, N. Y.

Hardy northern-bred 3-banded Italian queens. June 1, untested, \$1.00 each; \$9.00 per doz. A. E. Crandall & Son, Berlin, Conn.

"**SHE SUIT ME**" Italian queens; \$1.00 from May 15th to Oct. 15th. Allen Latham, Norwichtown, Conn.

GOLDENS.—1 lb. bees with untested queen, \$2.50; 2 lbs. bees with untested queen, \$4.00. L. J. Bond, Big Bend, La.

GOLDENS.—1 lb. bees with untested queen, \$2.50; 2 lbs. bees with untested queen, \$4.00. Mrs. T. H. Carruth, Big Bend, La.

Three-band and Goldens. 1 lb. bees with untested queen, \$2.50; 2 lbs. bees with untested queen, \$4.00. J. B. Marshall & Son, Big Bend, La.

Try **ALEXANDER'S** Italian queens for results. Untested, each, 75 cts.; 6 for \$4.25; \$8.25 per dozen. Bees by the pound. C. F. Alexander, Campbell, Cal.

Italian queens, THE HONEY GATHERERS. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

FOR SALE.—100 swarms in 8-frame hives, free from disease at \$5.00 per swarm.

J. Walker, Ogdensburg, N. Y., Rt. 5.

FOR SALE.—30 colonies Italian bees with honey house, 80 extracting supers, 4 fr. extractor, etc. No disease. L. K. Hostetter, Rt. 5, Lancaster, Pa.

FOR SALE.—One to fifty colonies of Italian bees in 10-frame hives. Bees and hives are in A 1 shape. No disease. Price \$10.00 per colony.

John C. Bull, Hammond, Ind.

QUEENS and bees by the pound; Golden Italians, Imported Blue Ribbon strain—the kind that gets results, ready May 10th. Write for prices.

J. W. Rice, Fort Smith, Ark.

FOR SALE.—First class Italian queens and bees in season. Send for price list. Bees free from disease, safe arrival and satisfaction guaranteed.

M. Bates, Greenville, Ala., R. 4.

BREEDING QUEENS.—I have a few extra choice Italian breeders for spring delivery. Price \$5.00 each.

J. E. Wing, 155 Schiele Ave., San Jose, Cal.

BUSINESS-FIRST QUEENS.—Three-banded and golden untested queens, \$1.00 each; also Belgian hares. Send for price list.

M. F. Perry, Bradentown, Fla.

FOR SALE.—Golden Italian queens of an improved strain; the bee for honey, hardiness, gentleness, and beauty. Untested, \$1.00; tested, \$2.00.

Wallace R. Beaver, Lincoln, Ill.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1; 6 for \$5.

Wm. S. Barnett, Barnetts, Va.

Bright Italian queens, ready April 15th, \$1.00 each. Safe arrival guaranteed. Write for prices of larger quantities.

W. W. Talley, Greenville, Ala, Rt. 4.

Owing to the loss of about 80 per cent this winter, I will not have any queens and bees for sale this season. Only what orders I have already booked.

Henry S. Bohon, Rt. 3, Box 212, Roanoke, Va.

FOR SALE.—Golden Italian queens which produce gentle yellow bees, the hardest workers we have known. Untested, \$1.00; tested \$1.50. Wild-flower Apiaries, So. Trust Bldg., Little Rock, Ark.

FOR SALE.—Italian bees in 8 and 10 fr. hives. Hoffman and Danz. frames wired, full sheets of foundation; also 1, 2 and 3 fr. nuclei.

Henry Shaffer, 2860 Harrison Ave., Cincinnati, O.

FOR SALE.—10 colonies Italian bees in 10-fr. hives, wired frames; combs built on full sheets of foundation; no disease; \$8.00 per colony, F. O. B. Amboy.

J. B. Ratcliffe, Amboy, Minn.

Warranted queens from one of Dr. Miller's breeders, \$1.00 each, \$10.00 per doz. Package bees, 1 lb., \$1.75; 2 lbs., \$3.00; add price of queens.

Geo. A. Hummer, Prairie Point, Miss.

FOR SALE.—Bees, 78 colonies in 10-frame hives, all but 2 in Mitchell hives, 110 supers filled with comb foundation and comb.

Alex Crisler, Box 128, Walton, Ky.

FOR SALE.—Three-band Italian queens from best honey-gathering strain obtainable. Untested queens, \$1.00 each; 6, \$5.00; 12, \$9.00. Safe arrival and satisfaction guaranteed.

W. T. Perdue, Ft. Deposit, Ala.

Pound package and queens for sale.—Booking orders for spring and summer delivery. My famous Italians will please you. 1-lb. pkg., 2-lb. pkg., and 3-lb. pkg. Book and get prompt service.

H. B. Murray, Liberty, N. C.

Tested leather-colored queens, \$2.00; after June 1, \$1.50; untested, \$1.00; \$10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

FOR SALE.—Not being able to properly care for all my bees, will sell 100 colonies. Free from all disease. Wintering fine in cellar.

D. W. Trescott, Conesus, N. Y.

We have several hundred pounds of bees and 3-banded Italian queens for sale, April 1st delivery; safe arrival guaranteed. Write for prices. J. A. Jones & Son, Hope Hull, Montgomery Co., Ala.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey gatherers as can be found; each \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

J. B. Brockwell, Barnetts, Va.

Golden Italian queens bred strictly to produce Golden Bees of the best honey-gathering strain. Untested, each \$1.00; 6, \$4.25; 12, \$8.25; 100, \$60.00. Satisfaction guaranteed.

L. J. Pfeiffer, Route A, Los Gatos, Cal.

QUEENS.—We are breeding from the best Italian stock. Untested, \$1.00; select untested, \$1.50; tested, \$2.00. We have been breeding queens for more than 20 years. We guarantee safe arrival.

E. A. Simmons, Greenville, Ala.

ITALIAN QUEENS.—The best I have ever had; untested each \$1; five, \$4.50; ten, \$8; twenty, \$15; fifty, \$35; 100 for \$60. Delivery beginning in June. Orders filled on time and safe arrival guaranteed. Yours for more honey.

J. B. Hollopeter, Queen Breeder, Rockton, Pa.

TESTED QUEENS BY RETURN MAIL.—Choice tested queens from our strain of three-banded Italians, reared last fall and wintered in four-frame nuclei, \$1.25, \$14.00 per doz. Satisfaction guaranteed. No disease.

J. W. K. Shaw & Co., Loresauville, Ia.

FOR SALE.—Golden Italian queens. Untested queens, \$1.00 each; six, \$4.25; per dozen, \$8.25; 50, \$32.50; \$60.00 per 100. Tested queens, \$1.50; 1 frame nucleus, no queen, \$1.25; 2 frame, \$2.25; 3 frame, \$3.00; breeders, \$5.00 and \$10.00.

L. J. Dunn, 54 Broadway Ave., San Jose, Cal.

Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolans. Tested, 1.00 each; untested, 75 cts. each. Bees per lb., \$1.50; nuclei, per frame, \$1.50. Send your order for bees early.

C. B. Bankston & Co., Buffalo, Leon Co., Tex.

Leininger's Strain of Italians have a record of 30 years. Queens ready in June; untested, each, \$1.25; 6, \$6.00; tested, each, \$1.75; 6, \$9.50. July and later, untested, \$1.00; 6, \$5.50; tested, \$1.50; 6, \$9.00. Every queen guaranteed.

Fred Leininger & Son, Delphos, Ohio.

GOLDENS THAT ARE TRUE TO NAME.—Queen nucleus and bees by the pound. We receive hundred of testimonials annually, write for list. Untested queens each, \$1.00; 6, \$4.25; 12, \$8.25, write for prices in lots. We are now booking orders for early delivery.

Garden City Apiaries, San Jose, Calif.

THREE BANDED ITALIANS ONLY: queens, packages and nucleus, untested queens each, \$1.00; 6, \$4.25; 12, \$8.25. Write for prices in larger lots, also nucleus and pkgs. Booking orders now. If you consider quality, pure mating and low price, I am your queen-breeder.

H. G. Dunn, The Willows, San Jose, Calif.

FOR SALE.—Good Italian queens. Tested, \$1.00, six for \$5.40; untested, 75c, six for \$4.25; nuclei with untested queen, 2 frames, \$3.25; 3 frames, \$1.25; with tested queen, 2 frames, \$3.50; 3 frames, \$4.50. 1 lb. pkg. with untested queen, \$2.25; 2 lb. pkg., \$3.25; with tested queen, 1 lb. pkg., \$2.50; 2 lb. pkg. \$3.50.

G. W. Moon, 1904 Park Ave., Little Rock, Ark.

HELP WANTED

WANTED.—Two men for comb honey. Give age, wages and experience.

B. F. Smith, Jr., Fromberg, Mont.

WANTED.—Experienced beeman. Will pay good wages for right man.

J. W. Potts, Gunnison, Miss.

WANTED.—A young man of good habits to work with bees. One who has had some experience. State wages. J. B. Merwin, Prattville, N. Y.

WANTED.—Man to work with bees the coming season. Address, stating age, experience and wages, we to furnish board. The Rocky Mountain Bee Co., Billings, Montana, Box 1319.

WANTED.—For five months, a man to work in apary who is not subject to draft. State age, weight, and experience in first letter, with board and room furnished. Frank C. Alexander, Delanson, N. Y.

WANTED.—Single or married man above draft age to work with bees and general farming. Also man below draft age to work in bees during July and August. State wages expected and experience in first letter.

Roscoe F. Wixson, Dundee, N. Y., Rt. No. 4.

WANTED.—Industrious young man, fast worker, as a student helper in our large bee business for 1918 season. Truck used for out-yards and hauling. Apiaries located near summer resorts. Will give results of long experience and board and small wages. Give age, weight, experience, and wages in first letter.

W. A. Latshaw Co., Clarion, Mich.

WANTED.—Young men of energy and character, of clean habits, not eligible for military duty, as helpers in our extensive bee-business. Fine chance to learn. Write immediately, giving wages, age, height, weight, experience, and references all in first letter, or expect no answer.

E. F. Atwater, Meridian, Idaho.

SITUATION WANTED

WANTED.—By a specialist in bee culture a position with large beekeeper. South preferred.

Harry Lynd, 602 So. Salina St., Syracuse, N. Y.

WANTED.—A position for the summer with a bee-keeper by a farmer's daughter. Address Carrie Strauss, 170 West 78th St., New York City.

WANTED.—Position by practical beekeeper of ten years' experience, also have had experience managing out-apiaries.

Alton O. Carley, Munith, Mich., Rt. No. 1.

WANTED.—Man to live on small place and care for bees. State wages and experience. Permanent employment to right party.

S. R. Stewart, Rifle, Colo.

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Farm, Garden and Orchard Tools

Answer the farmer's big questions: How can I grow crops with least expense? How can I produce fancy fruit with the least time, labor and cost? The

IRON AGE Barrel Sprayer

solves the spraying problem for the small orchard, farm, public park, poultry yard and houses, etc. Easily pushed wherever wanted and operated by man or boy. The only pump built of its type, easily taken apart and made with renewable valves. We make a full line of orchard and field sprayers. Write today for booklet—free.



No. 197

Bateman M'f'g Co., Box 20 F, Grenloch, N.J.

TRADE NOTES

SECOND HAND HONEY CANS.

We have a accumulation of second-hand honey cans which we offer for use again. We save only such cans as are sound and fit to use again. A poorer grade we sell for use with low-grade oil and the cans too poor for such use are destroyed. The cans we offer for sale have been thoroly cleaned outside but not inside. Just before filling they should be steamed or scalded out. It is very difficult to remove all moisture from square cans with the small screw cap in the corners and unless it is removed or the can is promptly refilled rust will form inside, destroying its usefulness for honey. The film of honey left in the can prevents rust forming. This can be removed just before cans are used again without much trouble by using steam or boiling water. Be careful also to run the washings into a closed drain to guard against possible communication of foul brood. The boxes also are put in good condition. Our price for these second-hand cans, 2 in a box, is \$8.00 for 10 boxes; 75c a box, in lots of 25 or more. We will undertake to wash the cans clean inside and dry them at an extra price of 15c per case.

The A. I. Root Co.

The A. I. Root Co.

BEES	Tested Italian queens . . .	\$1.50
	Silk faced veils	.80

We furnish a full colony of Italian bees in a new 8-frame chaff hive, complete with super, for \$15.00. Three-frame nucleus with Italian queen in May, \$5.50.

I. J. Stringham, Glen Cove, L. I., N. Y.

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BEES FOR PROMPT
DELIVERY NOW

We are prepared to furnish promptly on receipt of order full colonies of pure Italian bees in eight- and ten-frame hives with tested queens worth \$2.00 and over. Start right by getting the best as well as something that you can handle without trouble and with all the chances to make a fine big colony in ample time for the honey flow. Remember in buying full colonies you get the whole thing and not just part of it. These are the biggest bargains offered you. Price, 8-fr., \$9.00; 10-fr., \$10.00, each including a fine tested queen.

We will have some pound packages and nuclei later on but are not in position to book your orders now but will notify you in these columns when we are ready to ship.

Dr. Miller Queens

We will again rear and offer you queens from Dr. Miller's breeders. They are noted for their honey-gathering qualities and we have many unsolicited reports of their remarkable gentleness. Two experienced queen breeders have pronounced them the gentlest bees they have ever seen. Untested, \$1.00 each, or \$11.00 for 12.

We will also have queens of our strain and should be able to handle your orders for queens after the 10th of May without booking them.

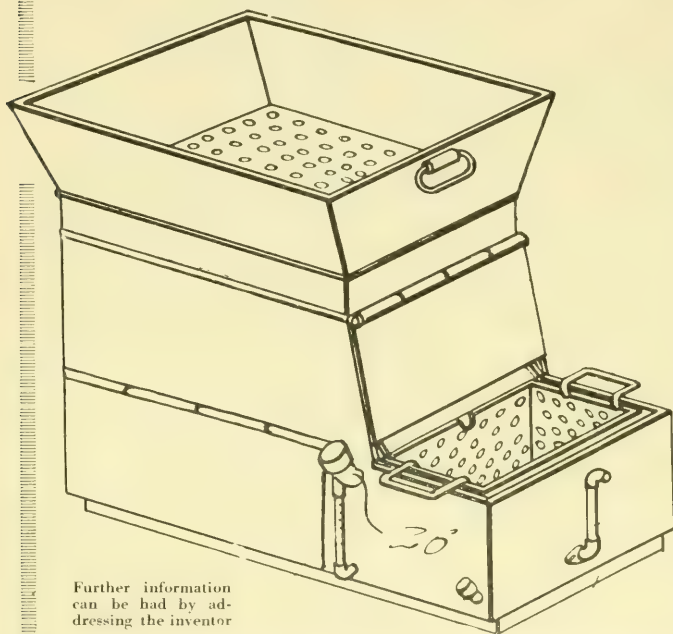
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450,000 TREES

200 varieties. Also Grapes, Small Fruits, etc. Best rooted stock. Genuine, cheap. 3 sample blackberries mailed for 10c. Catalog free. LEWIS ROESCH, Box H Fredonia, N.Y.

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can be had by ad-
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THE BEST on THE MARKET. Saves fuel, labor, time, and worry, having 5 working parts in 1. Melts your cappings and separates your honey and wax from slumgum, so that everything is completely cleaned up at the end of the day's run.

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P. O. Box 145
Imperial - Calif.

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WE guarantee our bee-supplies to be of standard make, and first-class material and workmanship. They **MUST SATISFY** you, or we will refund your money without question.

For 17 years we have given this unqualified guarantee. You can buy your supplies by mail from us and be sure of satisfaction.

Our standard dovetail hives are made of clear Northern White Pine lumber. Experienced beekeepers know that there is no lumber as good as White Pine for hives or frames.

We sell everything necessary for successful beekeeping, and, what is equally important, we take an interest in helping our customers succeed. Our lifetime of experience is yours for the asking.

Send for our catalog of bee supplies and bee information today.

Minnesota Bee Supply Company
20 Power Bldg., Nicollet Island, Minneapolis, Minn.

Our Food Page—Continued from page 221.

cup flour. Beat the egg in the mixing bowl, add the sour milk, then the dry ingredients, adding the other $\frac{1}{4}$ cup of flour if the batter seems too thin. Cornmeal batter should always be much thinner than an all-flour batter as cornmeal should be given room to swell. Add the melted shortening last. Bake in a shallow pan about 45 minutes. It may be baked in muffin pans if preferred. Eat with honey.

FIVE HOUR METHOD BREAD.

- | | |
|------------------------------|-------------------------------|
| 1 compressed yeast cake | 1 cup water |
| soaked in | $1\frac{1}{2}$ teaspoons salt |
| $\frac{1}{2}$ cup warm water | flour |
| 1 cup milk | |

Scald the milk, add the salt, and cool by adding the cup of water cold. When lukewarm, add the yeast and the water in which it has been softened. Add enough flour to make a batter, about one quart, and beat very thoroly. Now add enough more flour or white flour substitute to make a dough, and knead until smooth and elastic. Put in a warm place to rise (about 80 degrees) and when risen divide into loaves, or a loaf and biscuits, and set to rise again. When light, about doubled in bulk, bake.

For making bread dough the rule is one part liquid to three parts flour or more. The

(Continued on Page 253.)

Garden Seeds

ALMOST GIVEN AWAY

\$100 WORTH of the Most Delicious Vegetables Can Easily be Grown From These Seeds



Box Contains 42 varieties best, earliest and most desirable Vegetables on earth, just what every planter needs and must have: Viz., early, medium and late Beets, butter and head Lettuce, red, pink, and white Radishes, earliest and biggest Tomatoes, mammoth Sugar Parsnips, earliest Swiss Chard, etc. Also 42 Varieties of the most lovely Flowers—including the wonderful Japanese Giant Morning Glories—direct from Japan; and marvelous Ever-Blooming Petunias—real wonders. ALL above

Vegetables and Flowers, Extra Big Packets—over 8,000 selected Seeds—securely Boxed and mailed to any address for Two Dimes or 24 1c stamps. Six Boxes, \$1.00. Get up a club.

A. D. COOK, Seed Grower
HYDE PARK, N. Y.

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They Sell Beekeepers' Supplies
They Buy Honey and Beeswax
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Your Correspondence
is Solicited

Western Honey Producers
Sioux City, Iowa

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Bee Supplies

AT ROOT'S PRICES
PROMPT SERVICE



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Farm, Garden and Orchard Tools

Answer the farmers' big questions. How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The

IRON AGE Potato Planter

solves the labor problem and makes the best use of high priced seed. Means \$5 to \$50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

No Misses
No Doubles

Bateman M'f'g Co., Box 20B, Grenloch, N.J.



Grow GLADIOLI

FLOWERS ALL SUMMER FOR \$1

There is no flower that is so easily grown and blooms so readily as the Gladiolus. The long spikes are graceful and fascinating in their great array of colors; if cut as first flower opens and placed in water, the flowers develop for a week, even to the last bud. Commence planting in April and repeat at 10-day intervals until end of June, and you will have flowers until late Autumn. Leaflet "How to Grow" included in each order. "Homewood" Gladiolus 75 Fine Bulbs, Many Kinds Mixed FOR \$1.00 MAILED FREE to customers within fourth postal zone (600 miles) from Chicago or New York. For further zones add 16 cents in stamps.

152-page colored catalogue mailed FREE everywhere.

Vaughan's Seed Store

31-33 W. Randolph Street, (Dept. L.) CHICAGO
41-43 Barclay Street (Dept. L.) NEW YORK

Spray
Your
Crops

KANT-KLOG SPRAYER

9 sizes of sprays from one nozzle. Starts or stops instantly—saves solution and work. Send for catalog. Agents wanted. Rochester Spray Pump Co.

207 Broadway Rochester, N. Y.

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GARDEN TOOLS

Answer the farmer's big questions: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Hill and Drill Seeder

solves the garden labor problem.

Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools.

A woman, boy or girl can push it and do a day's hand-

work in 60 minutes. 30 combinations. \$1.50 to \$30.00. Write for booklet.

306
Drill
and
Wheel
Hoe



Bateman M'f'g Co., Box 20C, Grenloch, N.J.

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Deposits may be sent in the form of check, draft, money order or the currency by registered mail.

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LEPAGE'S
GLUE
HANDY
TUBES
WILL MEND IT

Our Food Page—Continued from page 251.

substitutes vary so much in absorbing power that it is difficult to give the amount.

OATMEAL MACAROONS.

- | | |
|----------------------------|--------------------------|
| 1 tablespoon melted fat | 1½ cups oatmeal |
| ¼ cup honey | ¼ teaspoon salt |
| 2 tablespoons sugar | ½ teaspoon baking powder |
| 1 egg | |
| 2 teaspoons almond extract | 1½ tablespoons flour |

Blend the melted fat, sugar and honey, stir in the egg well beaten and the almond extract. Sift the baking powder and flour together and combine with the other dry ingredients. Drop from teaspoon on oiled baking sheet, and bake in moderate oven about 15 minutes. This recipe should make 25 or more macaroons. You may vary this recipe by substituting ½ cup shredded coconut for that much oatmeal and one teaspoon vanilla for the almond extract.

PEACH PUDDING.

- | | |
|---------------------------|---------------------------|
| 1 quart can peaches | 1 cup flour |
| 1 teaspoon oleomargarine | 3 teaspoons baking powder |
| ½ cup mashed potato | |
| 1½ tablespoons shortening | ½ teaspoon salt |
| | milk |

Put the peaches in a glass or earthenware pudding dish in the oven to heat thru. If very juicy, it is well to thicken them with a little flour or cornstarch. Cut the shortening into the flour, baking powder, salt and mashed potato with two knives, add enough milk to make a dough which can be handled, roll out and cut into small biscuits. Dot the

(Continued on Page 255.)



Free!

A 50-gallon barrel of Scalecide free to any one who will suggest a **fairer** guarantee than that given below.

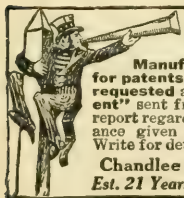
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As proof of our confidence and to strengthen yours, we will make the following proposition to any fruit grower of average honesty and veracity:

Divide your orchard in half, no matter how large or small. Spray one-half with "SCALECID", and the other with Lime-Sulfur for three years, everything else being equal. At the end of that time, three disinterested fruit growers say that the part sprayed with "SCALECID" is not in every way better than that sprayed with Lime-Sulfur, we will return you the money you paid us for the "SCALECID".

Send for new free booklet, "Profits in Fall Spraying".

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Manufacturers constantly writing us for patents. List of inventions actually requested and book "How to Obtain a Patent" sent free. Send rough sketch for free report regarding patentability. Special assistance given our clients in selling patents. Write for details of interest to every inventor.

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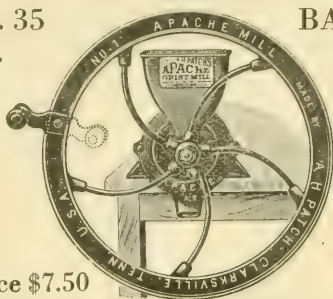
Why not live better and save money, too? Grind your wheat into Best Whole Wheat or Graham Flour. Your doctor knows how healthy these are. Make the **BEST Corn Meal**, the old-fashioned sort you can't buy at any price nowadays.

Do all sorts of fine and coarse grinding with an

APACHE MILL

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lbs.

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This Mill Makes Best Corn Meal, Graham Flour, Rye Flour, Chops, Hominy, Cracks Peas, Grinds Coffee, Spices, etc. Perfect adjustment for coarse or fine work. Will send Mill prepaid by Express **\$7.50**

APACHE GRIST MILL—Largest capacity, fastest grinding, easiest turning handmill. Does more, lasts longer.

A. H. Patch, Inc., Clarksville, Tenn.

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Invented 1885

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In big and small shipments, to keep Buck's Weed-process foundation factory going. We have greatly increased the capacity of our plant for 1918. We are paying higher prices than ever for wax. . . We work wax for cash or on shares.

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Big stock, wholesale and retail. . . Big catalog free.

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The Comb-foundation Specialist

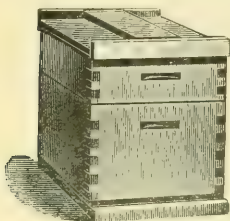
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Established 1899

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Prompt service and no trucking bills.

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The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid

Dealers everywhere

"Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from.

QUEENS THAT WILL PLEASE OVER 20 YEARS OF CAREFUL SELECTING AND BREEDING

GUARANTEE.

You take no risk
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queens, for I
guarantee every
queen to reach
you in first class
condition, to be
purely mated,
and to give per-
fect satisfaction.

They are bred from IMPORTED stock. The very best for honey gathering and gentleness. They are not given to swarming and are highly resistant to diseases. Give me your order and if after you have given my queens a fair trial, you are not satisfied in every way that they are as good as you have ever used, just return them and I will send you queens to take their places or return your money with any postage you have paid out on returning the queens.

PRICES APRIL 1 TO JUNE 15th.

	1	6	12
Untested.....	\$1.00	\$ 5.00	\$ 9.00
Select Untested..	1.15	6.00	10.00
Tested.....	1.50	8.00	17.00
Select Tested.....	2.00	11.00	20.00

L. L. FOREHAND - - FORT DEPOSIT, ALABAMA

Our Food Page—Continued from page 253.

peaches with the oleo, place the biscuits over them and bake in a quick oven. Serve the peaches with the biscuits dipped over them for a sauce.

POTATO PUFFS.

- | | |
|---------------------------------|-----------------|
| 3 cups riced potatoes | 1 teaspoon salt |
| about ½ cup milk | 1 egg |
| 2 tablespoons butter substitute | grated cheese |
| | paprika |

Heat the milk, melt the butter substitute in it and add to the hot riced potatoes and salt. Beat the egg and add. Make into round puffs on a well oiled pan, dust with grated cheese and paprika. These may be prepared at noon and baked for the evening meal.

GOLDEN MARMALADE.

- | | |
|-----------------------------|--------------------------------|
| 1 pound evaporated apricots | 1 large can shredded pineapple |
| | Honey |

Soak the apricots in water to cover four or five hours or over night. In the morning put them thru the food chopper and mix them with the shredded pineapple together with the water in which they were soaked. Measure the pulp, and for every cup allow ¾ cup honey. Cook slowly until thick. It is well to cook a small amount at a time. It will cook thick in a very short time.

TAMALE PIE.

- | | |
|----------------------|----------------------|
| 2 cups cornmeal | 1 onion |
| 6 cups boiling water | 2 cups tomatoes |
| 1 tablespoon fat | 1 pound ground steak |
| 2 teaspoons salt | |

Make a mush by pouring the boiling water slowly over the cornmeal and salt, stirring all the time to avoid lumping. Cook in double boiler about 45 minutes. Brown the onion in the fat, add the ground steak and stir until the red color disappears. Season and add the tomato. Tomato canned with sweet peppers is good for this dish. Grease a baking dish, put in a layer of the mush, add seasoned meat, and cover with the mush. Bake 30 minutes.

All measurements level.

Complete Line of Beekeepers' Supplies

Catalog on Request

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A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. **THE BEST LIGHT CO.**
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All boxed, ready to ship at once; 275,000 Hoffman frames, also Jumbo and Shallow frames of all kinds, 100 and 200 in a box Big stock of Sections, and fine polished Dovetailed Hives and Supers. I can give you big bargains. Send for a new price-list. I can save you money.

*Will Take Beeswax in Trade at
Highest Market Price.*

Charles Mondeng

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Established 1885



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Beekeepers' Supplies

THE Kind That Bees Need.

The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.

High Hill, Montgomery Co., Mo.

BEE-SUPPLIES

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Lowest Prices, Quality Considered

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19-C

Easy to push, fast, thorough low in cost. Opens and covers furrow for seed and fertilizer. Cultivates wide or narrow rows. Turns soil and covers scratch foods in poultry yards. 30 other Iron Age Combinations. Send for free booklet today, and learn how to garden the modern, easy way.

Bateman M'f'g Co., Box 208 Grenloch, N. J.



AROUND THE OFFICE

M.-A.-O.

Doggone it! The Roots have just squeeze me down to about nothin' at all this time. I guess my total eclipse and extineckshun as a author aint far off. They say I ain't no business takin' up so much space. They want it all for their tony, high, stuck-up departments like E. R. Root's, Dr. Miller's, J. E. Crane's and Grace Allens's. But the real truth is, it's a case of oppresshun, so it is. I guess I know what oppresshun is. I have had it all my life along with suppresshun. They're somethin' alike. I could stan' it better if it was weather so I could go fishin' down where it's all quiet and soothin' backside of the old woodlot. If I get back in next month, look out. I'll bet I'll peel somebody. See if I don't.

When You Take Your Bees Out of the Cellar some will be missing, some with inferior queens; all of these will be weak. You will want to strengthen them up as soon as possible, so they will be in good shape for the early flow. Then get some of

Forehand's Three-Bands

THE THRIFTY KIND

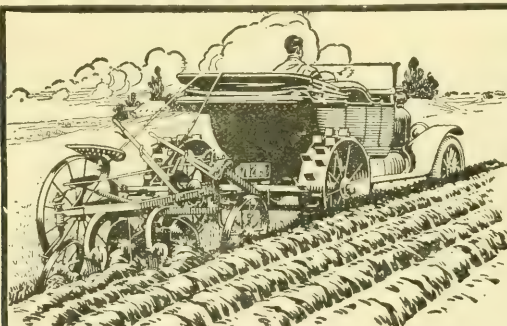
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Write for Circular.

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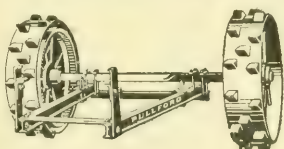


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MAKES a practical tractor out of a Ford or most any other car. Easily attached to or removed from the car in thirty minutes. No holes to drill, no springs to remove. **Practical, Durable, Reliable.**



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Hundreds WORKING NOW for Satisfied and Enthusiastic Owners

Pulls plows, harrows, drills, mowers, binders, hay loaders, road graders, wagons, trucks, etc. Steel wheels with roller bearings and tires 10 inches wide, two pairs of hardened Vanadium steel pinions, one for plowing and one for hauling speed. A tractor with the reliability and durability of the Ford car. Prompt shipment. Write for catalog.

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Don't Be Too Late

TO get those hives, frames, sections, and other supplies you will soon be needing.

We wish we could effectually impress upon the minds of all beekeepers the absolute necessity for ordering early. Did you ever wait impatiently for supplies when a big honeyflow was on? Did you not then resolve to order earlier next time?

Then Do It!

Another month may be too late. Express and freight deliveries are slower than they have ever been before. Send your order to our nearest service branch.



FOR YOUR COUNTRY

Do the
Most
Efficient
Beekeeping
You can
And
Boost
The Third
Liberty
Loan
Campaign



The A. I. Root Company

Medina, Ohio

St. Paul
New York

Philadelphia
Chicago

Indianapolis
San Francisco

Los Angeles
Norfolk

THE PROOF OF THE PUDDING



Riverside Farm and Bee Apiary

G. A. BARBISCH, PROP.

HIGHEST GRADE EXTRACTED HONEY



R. 1

LaCrescent, Minn. 191

**Dadant & Sons,
Hamilton, Illinois.**

Gentlemen:

Have shipped you today, by freight prepaid, 82 pounds of No. 1 Quality Yellow Beeswax. Enclosed find bill of lading. Please work same into medium brood foundation, pack in 3 or 5 lb. paper cartons and ship by freight to Mound Prairie, my nearest freight office. Let me know at once how much the charges are and I will send check by return mail.

Wish to tell you that Dadant's Foundation is far ahead of any other kind I ever tried; no trouble to get bees to accept it and make into beautiful combs. You surely hit the nail on the head when you say it excels. Hereafter, as long as I can get Dadant's Foundation, I shall use no other kind.

G. A. BARBISCH,
Feb, 20/18, Mound Prairie, Houston Co., Minn.

**WHEN ORDERING of YOUR DEALER INSIST on DADANT'S
FOUNDATION, IF HE HASN'T IT, ORDER FROM US.**

Dadant & Sons, Hamilton, Ills.

Cleanings in Bee Culture



Where the Algaroba Grows

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you spot cash for anything you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.

633 Central Bldg., Sixth and Main Sts.

Los Angeles, California

Telephones: Home 10419; Main 5606

BEEKEEPERS KEEP IN TOUCH WITH

Leutzing & Lane, San Francisco, Cal.

236-238 Drumm Street

Buyers of EXTRACTED and COMB HONEY
Shippers and Exporters of HONEY

The WORLD is our market

Our Specialty:

HIVES, SUPERS,
FRAMES, SECTIONS,
SHIPPING CASES

OUR location and equipment enables us to manufacture these goods at less than most other manufacturers. Let us quote you. The freight embargo, which is serious in some sections, has not delayed us to any extent. We can ship promptly. Get in touch with us today.

MINNESOTA BEE SUPPLY CO.

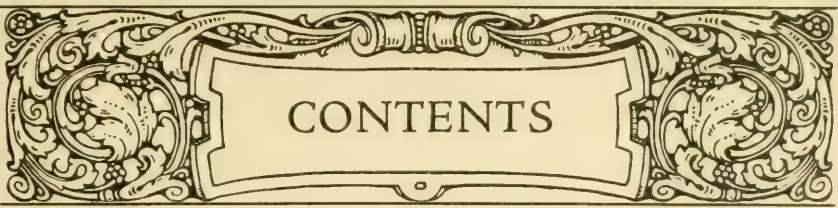
20 Power Building, Nicollet Island.

MINNEAPOLIS, MINNESOTA

*Wax rendered from old combs
at reasonable rates*

*Winter losses through dampness?
Write us for free information.*

*We have a big stock of Alley Queen and Drone Traps.
Will make very close price on quantity orders. Write
for prices.*



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Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly.

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

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Editor

Editorial Staff
A. I. ROOT
Editor Home Dept.

H. G. ROWE
Managing Editor

We offer you even better service
than ever before at our new loca-
tion.

Come in and see us.

Have you received our new catalog?

Write for our
1918 Bee Catalog
now.

BIG MONEY?

YES. READ HOW

If your banker said to you, "Mr. Brown, buy that piece of land next to you at \$100.00 per acre, it will be worth \$2,000.00 per acre this coming summer." Would you buy it to-day or wait—well, until later on? We are sure you would not delay one moment.

We offer you the same kind of buy—that is, make \$20.00 on each \$1.00 invested. Buy your sections and bee-supplies NOW for the sections cost less than \$1.00 per hundred and next summer when they are filled with honey, they will be worth \$20.00—think of it, those same sections that you bought for \$1.00. The same holds good on other supplies, ORDER NOW and tell your neighbors to do the same or Mr. Railroad Embargo "will buy that piece of land next to you and you'll be left."

Old Comb

Ship your old comb and cappings to us for rendering. We charge you 5c per pound for the wax rendered and pay you the highest market price.

Wax and Honey

We always buy Comb and Extracted Honey as well as Beeswax, so when you have the above to offer, write us and you will be well pleased.

FOUR REASONS FOR OUR SUCCESS

HONESTY
QUALITY

Lewis' Beeware

If you have used LEWIS' BEEWARE, you know the quality, if not this is just the time to invest your money where the results are lasting.

"Made Like Furniture"

PRICE
SERVICE

DADANT'S
FAMOUS
FOUNDATION

R O O T'S
SMOKERS and
EXTRACTORS

The Fred W. Muth Co.

Pearl & Walnut Sts.
Cincinnati, Ohio

"Quality Counts With Us."

EVERYTHING FOR THE BEES AND ALL ROOT QUALITY

BUCKEYE BEE HIVES

Warmer in winter—cooler in summer.

DOVETAILED HIVES

Eight-frame or ten-frame.

EXTRACTING OUTFITS

To suit your needs.

COMB HONEY OUTFITS

For amateur or commercial producers.

BEGINNERS' OUTFITS

With or without bees.

BEE SMOKERS

We have the kind and size you want.

SECTIONS

Fourteen sizes in stock.

COMB FOUNDATION

Weed process—the best yet.

EXTRACTORS

Two, four, six, and eight frame.

Beeswax Wanted.

Send for Catalog.

M. H. HUNT & SON

510 NORTH CEDAR STREET

LANSING, MICHIGAN

BEE-SUPPLIES

Read Order Early

Owing to the congestion of freight and embargoes we caution all beekeepers to get their order in early, otherwise you will suffer a great loss when you actually need goods, and you perhaps will be unable to get them for the above reasons. We have a large stock on hand, and can fill orders promptly, provided the railroads will accept freight.

Send for Our New Catalog

C. H. W. Weber & Co., Cincinnati, O.

2146 Central Avenue

HONEY MARKETS

The Bureau of Markets, United States Department of Agriculture, when issuing its semi-monthly news bulletin on honey, date of March 15, said: "This honey report will be discontinued with this issue until the new crop begins to move about June 1." Altho the Bureau of Markets evidently regards this season of the year as unimportant so far as honey quotations may be concerned, it has missed the chance to quote the highest prices paid for honey even in this period of remarkably high prices. During the past month extracted honey has sold in New York at 25c a pound in carlots. This top price, we understand, has been paid for export use. At this date (Apr. 22) the New York market is quoted a little off from the top, offerings of extracted in carlot amounts being made at 22c. That the export demand remains strong there can be no doubt, and so long as this demand continues honey prices are going to be abnormally high.

That honey imports are now to be restricted seems certain. In the official bulletin for March 23 there appeared the first list of the articles which will hereafter be restricted as to imports. Honey is on this list. This restriction is to be made under the authority granted the President on Feb. 14 by the trading-with-the-enemy act. The purpose is to eliminate the less essential imports to save tonnage. This restriction on honey imports would appear to keep out all of the West Indian and Australian honey that has heretofore come to the American market. It is known that American buyers during the first of the present year were active in Australia, resulting in the wholesale price there going from 7 cents to 11 cents a pound.

The Florida crop (and it has been a good one) is being held by well-informed honey producers for 18 cents F. O. B. shipping point.

The domestic demand for honey during the past month has been quite irregular—at times good and at other times slumping decidedly.

Looking to the future, there is promise of a large honey crop in the United States the coming season, no untoward general conditions arising. Some sections report bad clover conditions, but how general are such conditions, is as yet uncertain. There is the promise of a continued export demand, which means a continued high price for honey.

General Quotations of Wholesalers.

[These firms are asked to quote the wholesale prices they make to retailers. Accordingly, their prices must be figured at least one profit higher than the price paid to producers. The large dealers do not quote prices in print that they will pay futurally to producers.]

SAN FRANCISCO.—We certainly would like to submit a market report on comb and extracted honey, but it is impossible for us to do so on account of the fact that but little honey is coming in. At present we have no comb and no extracted. We have handled several shipments of Australian ex-

tracted honey recently, but it has all been sold in big lots and gone eastward. The California product is undoubtedly closely cleaned up and but little coming in. However, there are signs of new honey appearing on the market and it may be that some will be offering within the next few weeks.

Leutinger & Lane.

ST. LOUIS.—This market is entirely cleaned up of comb honey and there is very little extracted honey in receiver's hands. So firm quotations are not available. Extracted honey in a small way is selling from 16 to 18c, according to kind and quality. Clean, average, yellow beeswax, per lb., 38c.

St. Louis, Mo. R. Hartmann Produce Co.

PORTLAND.—Market practically bare of comb honey, with no offerings. Surplus stocks of extracted are being cleaned up fast. Demand good; very firm market. Comb honey, extra fancy, per case, \$6.00; fancy, \$5.75; No. 1, \$5.50. Extracted honey, white, per lb., 20 to 22c; light amber, in cans, 17½ to 19c. No beeswax offered.

Portland, Ore., Apr. 12. Pacific Honey Co.

CHICAGO.—Very little comb on sale. Receipts are nil. Best grades have been bringing 27c per pound; inferior, two to five cents less. Extracted is offered in limited amounts. Comb honey, extra fancy, per pound, 27c; fancy, 25c; No. 1, 20 to 22. Extracted honey, white, per lb., 18c; light amber, in cans, 17, amber, in cans, 16. Clean, average yellow beeswax, per lb., 40c.

Chicago, Ill., Apr. 17. R. A. Burnett & Co.

PHILADELPHIA.—We are entirely sold out on all grades of honey, both comb and extracted, and know of very little on our market in hands of the receivers. Reports of stocks among our retail buyers is that honey is well cleaned up. Very little or no demand at present with our trade.

Philadelphia, Pa., Apr. 15. Chas. Munder.

HAMILTON.—There is very little honey here. The demand is not very keen. Maple syrup has the floor. Extracted honey, white, is bringing 22c per lb.

F. W. Fearman Co., Ltd.
Hamilton, Ont., Apr. 16.

DENVER.—Demand for extracted honey in large lots continues good, but stock is practically all cleaned up. Practically no comb honey in the market. Comb honey, fancy, per case, \$6.00; No. 1, \$5.50; No. 2, \$5.00. Extracted honey, light amber, in cans, 18c; amber, in cans, 17c. For clean, average yellow beeswax we pay, per lb., cash 38c; trade 40c, delivered Denver.

The Colorado Honey Producers' Ass'n.

TORONTO.—Honey is practically off this market. The few small lots left are held at 30c per pound. The demand, owing to the high price, is very light and stocks might be said to be practically nil.

Toronto, Ont., Apr. 14. Eby-Blain, Ltd.

MONTREAL.—Supplies very small at present. Comb honey, extra fancy, per case, 23c; fancy, 21; No. 1, 19; No. 2, 17. Extracted honey, white, per lb., 19c; light amber, in cans, 18; amber, in cans, 17.

Gunn, Langlois & Co., Ltd.

CLEVELAND.—Our market is bare of honey and demand light, which is always the case at this season of the year. The last small arrivals sold at good prices.

C. Chandler's Sons.

KANSAS CITY.—The demand for extracted honey is very light, but there is a good demand for comb honey at \$5.00 per case. What little extracted is here is held by the large wholesale houses, to be used to put up glass packages. We note that there is an increase in the offerings of honey in small lots, by the small beekeepers in the West.

Kansas City, Mo., Apr. 16.

C. C. Clemons Produce Co.

LIVERPOOL.—Honey this month has witnessed a further big advance in prices, due to the scarcity of supplies and the good demand. Good extracted honey is worth 40 to 42 cents per pound. The market for beeswax continues quiet and prices are lower. The value of good quality is 48 to 50 cents per lb.

Taylor & Co.
Liverpool, Eng., Apr. 3.

Give the Boy a Chance!

He is just "itching" for that healthful, invigorating exercise that his young muscles will get when pushing a "Barker." Besides, the "Barker" will help and encourage him—**make garden work fun all summer long.** And with it he can do better work—and more of it—than ten men can do with hoes.

The BARKER Weeder, Mulcher, and Cultivator

Destroys the weeds and forms a moisture-retaining mulch, **in one operation.** Eight steel blades revolve against a stationary steel knife which passes just under the surface. They uproot and chop the weeds and strip the soil from them. "Best Weed Killer Ever Used."

The combined action of blades and knife at the same time pulverizes the hardest crust and clods and spreads this necessary mulch evenly over the surface. Moisture is thus retained and held at the plant roots.

The "Barker" works up close to the plants. Cuts runners. Leaf guard makes its use practical throughout the season. It also has easily attached shovels for deeper cultivation, making it three garden tools in one. Ideal for the market garden and small fruit farm as well as the ordinary kitchen garden.

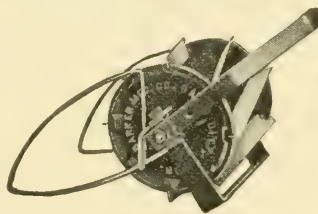
A ten-year-old boy can run a "Barker." He can do more and better work with it than two men with wheel hoes—and we can prove it!

Send for FREE Booklet

describing and illustrating the five different sizes, also containing helpful garden information. Show it to the boys and girls. Help them select the size best suited for **your garden.** We'll guarantee it to do the work or refund your money. Use the coupon, or better still, order the standard size, shown on this page, at once

Made only by the

BARKER MFG. CO.
Dept. 10, David City, Nebraska



**Model 8½ D
Cultivating
Strip 8½-in.
wide.
Price \$7.50.**

Thousands of "BARKERS" are in use. The following, from our many letters of commendation, shows what users think of them.

Barker Mfg. Co.,
David City, Neb.
Gentlemen:

Ladysmith, Wis.
May 28, 1917.

I have had considerable experience with your Weeder, Mulcher, and Cultivator and believe it to be one of the best implements on the market for garden use.

Yours very truly,
G. M. Householder.

Agricultural Extension Service State of Wisconsin.

Barker Mfg. Co., Dept. 10, David City, Neb.
Gentlemen:—

Send me, postpaid, your FREE Booklet and Factory-to-User Offer.

Name

Postoffice

State

BEE-SUPPLIES

FALCON LINE

We carry the largest supply
in our section. Send us
your inquiries.

Lowest Prices, Quality Considered

C. C. Clemons Bee Supply Co.
128 Grand Ave. KANSAS CITY, MO.



Established 1885

It will pay you to get our 50-page
catalog and order early.

BEEKEEPERS' SUPPLIES

THE Kind That Bees Need.

The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

WANTED—25 MORE TONS BEESWAX FOR MANUFACTURE INTO

SUPERIOR

HONEY COMPANY
OGDEN, UTAH

FOUNDATION

(WEED PROCESS)

We offer for beeswax 37c cash per pound F. O. B. Ogden, Utah. Send it along.

Note: We also manufacture beeswax into foundation at moderate manufacturing charge. Write for prices. Your foresight now will fortify you against advanced foundation prices and delayed shipments for the season of 1918.

Old combs and cappings rendered on shares. Our high pressure steam equipment secures every ounce of beeswax.

Write for Terms.

Best by Test, Prices on Request

NOTICE

Beekeepers' Supplies

We are now located in our new plant equipped with the latest machinery for making supplies. Write for catalog, which will be ready for mailing in January.

We Can Save You Money

no matter how large or how small your order is. A trial will convince you. Quality first.

We also render your wax from old comb and cappings. Our charge is only 5 cts. per pound for the wax rendered. Our steam press extracts every particle of wax possible to get.

Give us a chance to bid on your wants. Write for catalog today. All correspondence cheerfully answered.

The M. C. Silsbee Co., Avoca, New York

Did You Get Caught Last Summer?

TODAY is not one bit too early to order your Bee Supplies. If you should wait until July 1st, we would try just as hard to handle your order promptly, but you know what embargoes and freight congestions mean, especially if you are one of the thousands whose goods were tied up in transit last year until the honey season was over.

IF WE ALL MAKE ONE GOOD LONG STRONG PULL TOGETHER, we won't feel like slackers, and after the war is over we won't feel like sneaking out of sight when war times are mentioned.

Our part is to make supplies as good as we can and as fast as we can—your part is to give your bees the best care you know how to give them, and to make them produce all the honey possible.

To do this YOU MUST HAVE PLENTY OF HIVES, SUPERS, FRAMES, FOUNDATION, EXTRACTORS, SMOKERS, PLENTY OF EVERYTHING, used in your work, and YOU MUST HAVE THEM IN TIME TO USE THEM.

THE GOVERNMENT IS SHIPPING HONEY TO THE BOYS IN FRANCE—IT HELPS TO KEEP THEM FIT. We're trying to do our part. Let's pull together and help the boys take another trench. Don't wait another day about sending us your order.

SPRING CATALOG FREE

Kretchmer Manufacturing Co.

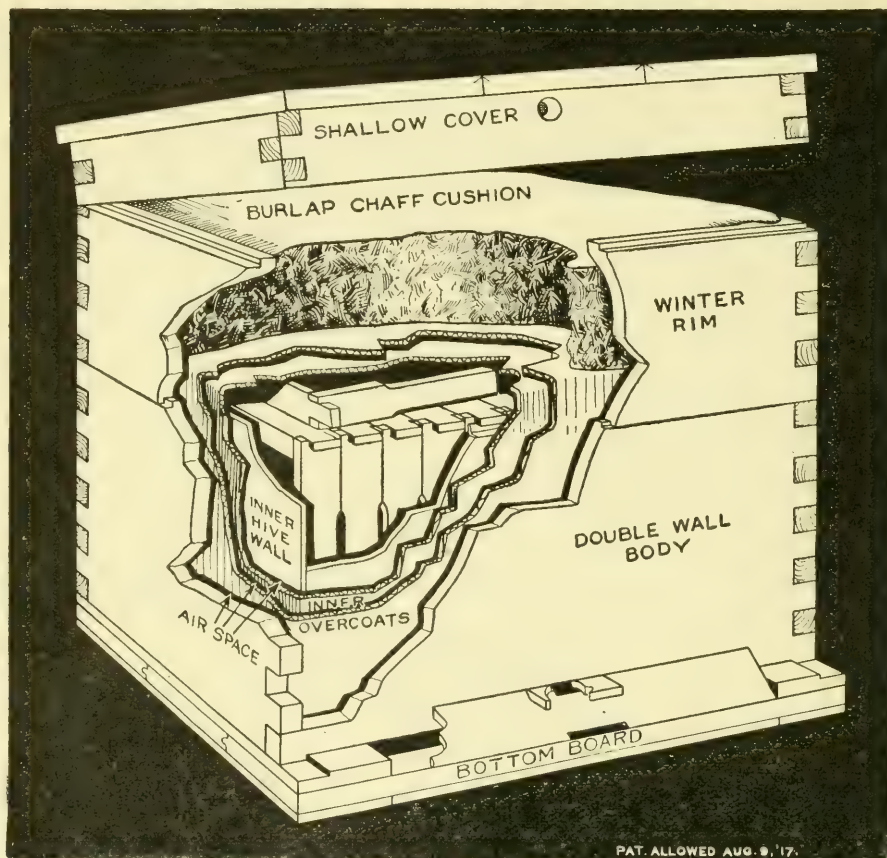
Beekeepers' Supplies, Tanks, Grain Bins, Silos

Council Bluffs, Iowa

Winter Problem Solved

By Woodman's Improved Protection Hive

"The Hive With an Inner Overcoat" ¹⁰⁰ PER CENT PERFECT PROTECTION BY TESTS, WINTERS OF 1916-17-18.



PAT. ALLOWED AUG. 9, '17.

THE INNER OVERCOAT DID IT. Without any special preparation we have wintered bees in these hives without loss. It is a joy to see the condition they are in, when compared with other styles or hives and wintering methods. The INNER OVERCOAT is telescoped down over the brood nest, in between the outer and inner hive walls, when preparing them for winter. In the spring it is removed and stored away in the K. D. flat. Not more than two minutes are required to pack or unpack a hive by this method. The INNER OVERCOAT affords more protection than several inches of ordinary packing material. Send for a special circular showing 10 large illustrations.

TIN HONEY PACKAGES. Sixty-Pound Cans, in cases or in bulk are being sold by us at prices a considerable below general market prices. Send us an estimate of your requirements and let us quote prices.

Friction-Top Pails, any size furnished and in quantities as you may desire. Send us a list of your requirements and let us quote prices as we can save you money. The tin can factories are rushed with orders, the tin plate situation is serious and transportation slow, so it will be wise to place your orders early.

A. G. Woodman Co., Grand Rapids, Michigan

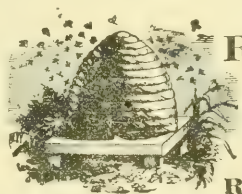
Spring is Here!

If you are in need of any supplies for this season better get your order in now. For the past week we have been unable to ship goods on account of embargo here. The Government has ordered no goods to be taken by railroads here except food stuff. We expect the embargo to be lifted the 8th of April. You see if you wait till goods are wanted we may be unable to ship promptly.

F. A. Salisbury, Syracuse, N. Y.

1631 West Genesee St.

THE PROOF OF THE PUDDING



Riverside Farm and Bee Apiary

G. A. BARBISCH, PROP.

HIGHEST GRADE EXTRACTED HONEY



R. 1

LaCrescent, Minn. 191

**Dadant & Sons,
Hamilton, Illinois.**

Gentlemen:

Have shipped you today, by freight prepaid, 82 pounds of No. 1 Quality Yellow Beeswax. Enclosed find bill of lading. Please work same into medium brood foundation, pack in 3 or 5 lb. paper cartons and ship by freight to Mound Prairie, my nearest freight office. Let me know at once how much the charges are and I will send check by return mail.

Wish to tell you that Dadant's Foundation is far ahead of any other kind I ever tried; no trouble to get bees to accept it and make into beautiful combs. You surely hit the nail on the head when you say it excels. Hereafter, as long as I can get Dadant's Foundation, I shall use no other kind.

**G. A. BARBISCH,
Feb, 20/18, Mound Prairie, Houston Co., Minn.**

**WHEN ORDERING of YOUR DEALER INSIST on DADANT'S
FOUNDATION, IF HE HASN'T IT, ORDER FROM US.**

Dadant & Sons, Hamilton, Ills.

GLEANINGS IN BEE CULTURE

MAY, 1918

EDITORIAL

YOU, MR. BEEKEEPER, are a soldier in this world's great army. Didn't you know



**Your Part
in the
Great Struggle.**

it? If you did not, it's time you woke up. You will find it out before this war is over, and the

quicker you realize it now and become accustomed to doing your share, the more efficient you will be when the crucial test comes that will later show us all what we must do, whether we wish to or not.

Your duty, Mr. Beekeeper, in this great world's crisis, is the duty of the soldier at home—to do most efficiently and intelligently everything that concerns food production. Don't leave a thing undone that may produce an additional ounce of honey. Get your brains and your hands to work. Neglect nothing. Do better than you have ever done before. And don't forget to speak a patriotic word wherever you can. Cheer for Uncle Sam. Lend him your money. Get others to do so. While our boys in khaki are dying for us and for this country and for humanity's cause "over there," let us "over here" do to the utmost what we can—and every man, woman, and child of us can help.

Do it.



YEARS AGO W. Z. Hutchinson in his journal, the Beekeepers' Review, sounded the



**More Bees
and How to
Get Them.**

slogan, "keep more bees." He kept this up until he made it a general propaganda. His

idea was that the necessary, fixed expenses in the case of a small number of colonies would eat up all the profits, while the same expenses would be but little more when two or three times the number of colonies were kept. He continued urging his readers to "keep more bees," until finally many of them followed his advice.

The propaganda, "keep more bees," would not apply in the case of the backlotter nor in that of the farmer who keeps only a few bees for pleasure and a little profit. But the man who makes beekeeping his sole means of livelihood can well afford to consider whether his locality will stand more bees, and whether he himself has sufficient

experience and skill to handle a larger number of colonies.

During these strenuous war times the question is of special importance. The Government thru its various bulletins has been urging beekeepers to "speed up on honey production." The general shortage of sugar and the difficulty of transportation have brought into the limelight the necessity of raising sugar (honey) right in one's back yard. This the bees can do and save much transportation.

The past severe winter, during which many bees could raise no brood or died outright, has brought to the beekeeper the problem of spring dwindling. Wherever winter or spring losses prevail, thousands of beekeepers will need more bees. If they are to "speed up on honey production," they must have more. There are two ways of getting them. One plan, and perhaps the more feasible, is to buy or rent bees in one's own neighborhood. The other plan is to buy bees from the South in package form. The former method, perhaps, should be tried first, as there are many farmer beekeepers and backlotters who will give their bees scant, if any, attention. The good beekeepers should get in touch with these people and, if possible, enter into an agreement to take care of their bees on shares, or, better still, buy outright. Every colony of bees in the country should be made to turn out its maximum output; but it will not do so unless the best beekeepers in the locality (and that means usually those who have the largest investment in bees) either buy or rent the bees of their neighbors. The farmers and backlotters would do much better to get a professional to take care of the bees for them. It then behooves you, Mr. Professional Beekeeper, and you, Mr. Backlotter, if you are up to date, to make arrangements so that every colony in your locality will yield its maximum of honey. You should also see that the entrances of all hives in your locality containing dead colonies are closed, as such a hive, with plenty of honey in it, is always a menace on account of bee disease.

In some cases it would be impossible to buy many bees in the neighborhood. One professional beekeeper writes us that he has been all around the country within 10 miles of home, and he finds that the bees are all dead. His own loss, however, thanks to pack-

ing and his practical knowledge of the requirements of wintering, will not be above the normal. But he wants more bees, he says. The only thing we can suggest is to buy bees in the package form.

This brings up the very, very serious question of transportation. Both freight and express are fearfully congested. Much of the express matter that ordinarily takes a week for delivery may now take three weeks. Delays like this in shipping bees would be fatal. On the other hand, all such shipments might be made by parcel post, resulting in very slight delay simply because Uncle Sam is the carrier. The question has been raised, in view of the fact that day-old chicks are now being sent by parcel post, whether bees could not be sent the same way. There is no reason why they should not be so sent. There are many more postoffices than express offices; and, if bees could be sent by mail, it would help out the war situation. All over the land are weak colonies that, without assistance, will not be able to produce any surplus honey; but if a pound of bees can be given to each, they might do as well as fair colonies wintered over. With express matter congested as it is, there is danger that bees by express may be delayed long enough to kill all the bees in shipment. Of all the exasperating and vexatious things in bee-dom, if we except foul brood and bad wintering, there is nothing worse than a lot of dead bees by express. The receiver blames the shipper, and the shipper blames the express company; and during the general controversy the consignee is left high and dry with no satisfaction. While it is not presumed that Uncle Sam will assume any responsibility in shipping bees by mail, yet it is probable that all packages will go thru without unnecessary delay.

Beekeepers are urged to write to the Third Assistant Postmaster-General and make clear that the general congestion in freight and express renders it absolutely necessary to have bees go by parcel post.

THE PAST WINTER was a severe one on bees in many localities; but, as a rule, it



**Fundamentals
of Wintering
Confirmed.**

was not serious to the professional beekeeper nor to those who put their bees up according to the

latest methods that are accepted by Government experts and by nearly all our best authorities.

Three or four facts stand out very clear. First, the loss last winter in the case of fair-to-good colonies well packed or in cellars was only slightly above normal. In practically all the Northern States the loss of colonies in single-walled hives outdoors was somewhere around 90 per cent. In other localities in New England and in the States immediately south of the Ohio River, where winter packing is not generally practiced, the losses were the heaviest ever known. In

our opinion had the beekeepers of the section covered by Missouri, Tennessee, Kentucky, and West Virginia packed their bees, the mortality probably would have been only normal. As it was, there were several million dollars' worth of bees lost when the small expenditure of only 50 cents or a dollar per colony in the way of winter packing or cases last fall would have saved \$5.00 worth of bees. The same proposition is exactly true in the New England States, where winter packing is the exception rather than the rule. The case of Mrs. Allen as reported in this issue is the exception that proves the rule.

Fact 2. It is often argued that winter packing is not necessary when bees are wintered outdoors. If there ever was a winter that proved the fallacy of this statement, it was the past one in our locality. While there were occasional instances of colonies in single-walled hives that wintered better than those in double-walled, with some exceptions the evidence in other localities as well as in our own, this year, is so strong and convincing that never again should a beekeeper in any State, except in the extreme South, try to winter without at least some packing.

Fact 3. It has been shown conclusively again this year, in our locality at least, that large entrances, such as are used in summer, either in double-walled or single-walled hives, means a 90 per cent loss of bees. Dr. E. F. Phillips of the Bureau of Entomology is exactly right, not only in advocating packing but the use of constricted entrances.

Fact 4. It has been made very clear from reports as well as by our own observation that the use of doorsteps or ledges just beneath the opening or entrance to a colony during winter is not only unnecessary but many times fatal. These attachments allow the snow or water to lodge and in many cases to close the entrance hermetically by freezing.

Fact 5. This was a winter that was not only cold, but it was accompanied by exceptionally heavy winds. The experience of the winter just past shows unquestionably the value of windbreaks. While colonies out in the open exposed to winds from all directions, and in single-walled hives, may winter successfully, yet these cases are so few and far between that we must conclude that they are the exception that proves the rule.

IT IS NOT too early, at least in California and the Southern States, for honey-producers



**Before You
Sell Your
Honey.**

to consider what price they should receive for their product and how to place a right value on it. Government officials interested in the welfare of honey-producers estimate that California beekeepers last year lost a sum somewhere between a half million and a million dollars by selling their honey too low

as a result of a lack of market information on the part of the producer and misrepresentation on the part of some buyers in the field. Of course, last spring and summer no one could forecast where prices would go. Quite likely some of those buyers may be in the field again.

We are not here to try to condemn the foolish policy of producers in contracting to sell their crop before it is produced nor are we trying to effect a reform in the morals of honey-buyers. Buyers are going to continue to buy as low as they can, taking advantage of lack of information on the part of sellers; and some of these buyers will continue to "bear" prices for the future as they have done in the past in order that they may cover future crops at low prices for future delivery. This is the human nature of all too many buyers in every line, we are sorry to say, and the trait has existed before and since as good a man as Jacob "skinned" his poor old father-in-law Laban. Let's not blame altogether the buyer for the producer's getting too low a price for his honey. That will do the producer no good, and will not work a reform in the buyer.

Let us, rather, lay a part of the fault at the door of the producer himself. He can accept or reject any offer for his honey; and if he accepts too low a price it is simply his own fault, resulting from lack of correct information as to market conditions which he might have known. It is just as possible for him today to secure information about the honey market as it is for the stock raiser or the wheat grower to know about the market for beef and wheat. This has not always been so, it is true. But today the Government issues twice-monthly bulletins from the Bureau of Markets giving honey market quotations thruout the country, and a half dozen bee journals in the country give their readers the most correct information that they have concerning honey market prices. If the honey-producer does not take a bee journal, he can have for the asking by applying to Office of Markets, U. S. Department of Agriculture, Washington, D. C., these honey-market bulletins sent to his address regularly. If the honey-producer does not take advantage of these various sources of market information, the fault is solely his own if he gets "skinned" in the sale of his honey. We are tempted to add that he is not entitled to any sympathy whatever if he today sells his honey at less than a just and fair price.

In this connection, Gleanings wishes to advise honey-producers not to put themselves at a disadvantage by letting anybody interested in the purchase of honey finance them. Do not buy supplies on credit, if in any way possible to do otherwise. Do not, without fullest information, take an advance payment from the honey-buyer. If the honey-producer must have money to carry on his business, let him make the greatest endeavor to finance himself without becoming obligated to the honey-purchaser either directly

or indirectly. Any advance help that the honey-buyer may extend to the honey-producer is advanced in the buyer's interest and not in the interest of the beekeeper.

All that the honey-producer needs to get the right price for his honey is to make himself as well informed concerning the honey market as successful men in other lines of agriculture are informed regarding the markets in their lines of production. The cure for low honey prices is better-informed honey-producers.



IN SOME localities beekeepers have reported to us that they have lost heavily on account of their



To Prevent neighbors spraying
Killing of Bees their fruit trees
By Spraying. with arsenate of lead or other pois-

onous mixtures while the trees were in full bloom, notwithstanding that experiment stations all over the United States, practically with one accord, have advised against it. In view of the fact that this spraying in most cases is done thru ignorance and not because of any malice toward the bees or the beekeeper, we shall have ready for distribution post cards which local beekeepers can send out telling when and how to spray.

These directions will show that lime sulphur mixtures will do no harm. They are not poisonous and moreover must be applied on the trees in the dormant state before either the blossoms or the leaves come out. Arsenate of lead, on the contrary, under many circumstances as used in spraying, is poisonous to bees and a direct damage to the blossoms themselves. The directions that go out from the experiment stations are to spray before the trees are in bloom and after the petals of the blossoms have fallen. Such practice is entirely effective in preventing the development of the codling moth in the embryo fruit and at the same time does absolutely no harm to the bees which are the fruit growers' best friends.

We will furnish these cards at 1c a piece in small amounts and cheaper in large amounts—at cost to us. All that will be necessary will be for the local beekeeper to put on a 1c postage stamp and mail them to local fruit growers. He can sign the postal cards, or not, just as he sees fit.

The mailing of these cards in a fruit-growing locality before the trees come into bloom, will save a lot of bees and brood. If there ever was a time when we needed to save both, it is this spring.

Probably most beekeepers whose bees are in danger from spraying, will not require more than a very few cards, and we will accept stamps in payment for these cards, whether few or many. We shall furnish them at bare cost, postage paid, seeking only to serve the beekeepers needing them and to promote a larger production of honey.

TIME and again we have been told by good bee authorities that an abundance of young bees in the fall is necessary to insure good wintering. We have accepted this assertion as logically correct, and have managed our bees accordingly.

Fall Dividing Condemned.

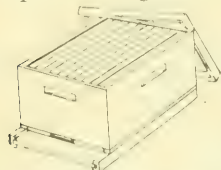
In a recent number of one of our bee journals a prominent beekeeper tells of his plan of making increase in September, by dividing his colonies, I suppose. According to my experience that is the greatest mistake a beekeeper can make, if good wintering and a large honey crop are the objects. In this locality it would be much more profitable to winter a colony full strength and divide it in the spring early enough to nip all swarming notions in the bud. When treated in this way it will produce at least twice as much surplus honey as the combined effort of both swarms made in September. Besides, we have fewer colonies to winter. Dividing a colony in September cuts its stock of young bees in halves. Having little chance to recuperate before winter sets in, both halves are liable to come out only half-strength in the spring. The theory of this plan seems to run in the opposite direction to the advice first given.

Which are we to follow?

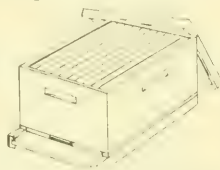
Fall Uniting.

Bees in a locality that is favored with a fall honey flow will generally produce plenty of young bees to go into winter safely. If the honey flow extends all thru the latter part of September, we should find hatching brood in October. If we don't, it is the fault of the queen, and the sooner she is replaced by a new one the better.

But to replace a queen in October is for various reasons not always practical. In such cases I resort to doubling up. Every colony that fails to come up to the standard mark of populousness for profitable wintering is united with a similar one before winter sets in. I make my selections for this purpose during the forepart of October.



(1) Weak colony with queen and sufficient stores for itself and weak colony (2) to be united with it.



(2) Weak colony, either with or without queen, to be united by placing above colony (1).

Those colonies that fill five spaces or more on a cool morning, when closely clustered, are considered safe for wintering. Those that occupy four spaces or less are doubled up.

HOW TO UNITE--SPRING and FALL

Two Colonies United, with Both Queens Retained, Working Peaceably. Other Uniting Plans

By G. C. Greiner

such hives as are to be placed on top, and providing the colonies intended for lower stories with winter stores sufficient for both colonies. This is the proper time for supplying any shortage of stores as later, when one hive is placed on top of the other, the bees should be disturbed as little as possible.

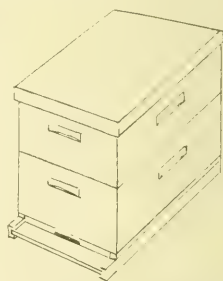
Any queens that are known to be in any way deficient are removed before their colonies are united, and they are the ones that take the upper place. If I have no choice in queens, I pay no attention to them—simply set the hives one on top of the other and let them fight it out on their own battleground. I do this uniting on a cool day when the bees are closely clustered. Thus there is no necessity of using a newspaper which is always a hindrance to good rapid work. The cool temperature seems to fulfill the mission of the newspaper, as the bees are disturbed but little and get acquainted only gradually. Having everything ready for the operation, it is done so smoothly that the bees hardly know anything has happened; and before they spread out again, which may take several days, the two colonies are so well acquainted with one another that they unite without any trouble.

This has reference to the two colonies of which the upper one is queenless. If both have queens, they are not likely to unite without assistance. Therefore a little different management is necessary. After they have been sitting in pairs (one on top of the other) for a number of days, they are made to unite the first time the weather is favorable for handling bees. Beginning on the opposite side from where the lower colony is clustered, the bees from one comb after another are swept off into the frames below, and having no alternative they readily accept as their home the empty spaces between the combs below. When all combs are thus taken care of, the empty hive-body is taken off and the hive with its two sets of inmates covered up. This operation may require a little smoke, both to make the upper bees retreat more readily down below and to keep the lower ones from coming up.

Fall and Spring Uniting Differ.

While it is an advantage to have strong colonies in the fall, it is no less so in the

At the same time that I make these selections I prepare the hives for the final uniting operation by unhooking or otherwise loosening the bottom-boards of

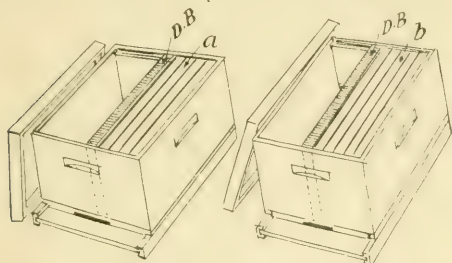


(3) Colony 2 placed above colony 1 with no queen-excluder between.

spring. Doubling up weak colonies at this time, altho in principle the same as when done in the fall, its immediate purpose is somewhat different. In the fall we prepare our bees for good wintering, while in the spring our aim is to prepare them for gathering our surplus honey crop. Having no need of taking the winter-store problem into consideration at this time, the mechanical execution of the operation is also managed in a little different way.

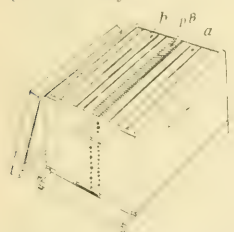
Spring Uniting of Weak Colonies.

All colonies set aside for this purpose are crowded by division-boards onto the least number of combs they can well cover. This



Colonies a and b crowded onto as few frames as possible.

is done several days before they are to be united that they may have a chance to congregate again on the reduced number of combs. When ready for the operation (which may be on some cool day, the same as



Colonies a and b in the same hive, separated by an ordinary division-board D B, which is removed in a few days.

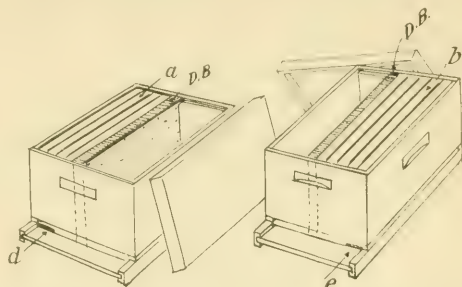
in the fall) one colony after another is hung into the hive of its intended partner into the space vacated by the reduction of its combs until all are treated in like manner. After a few days the division-board is removed and the hive otherwise arranged as may seem necessary for future super work.

Having been connected over the tops and under the frames and compelled to use the same entrance, they have gradually become sufficiently acquainted to unite in peace and harmony. If the doubled-up colony should still be too weak to promise any surplus returns, the same operation may be repeated a second or even a third time. Better have one good colony than a dozen poor ones.

Spring Uniting of Medium Colonies.

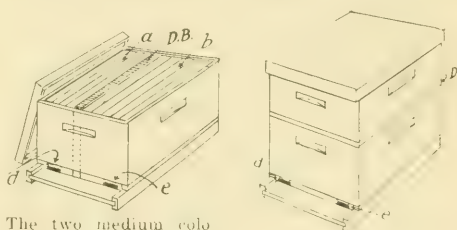
Occasionally one has a few medium colonies, too strong to be treated as the above and yet too weak to produce much surplus honey. Such colonies are too promising for one to lose their use entirely for the season and may be made to produce a fair yield by hanging two of them into a 10-frame hive with a tight-fitting division-board between, this honey-board being left thruout the entire season. Each colony should have its own passageway to its respective corner of the

front entrance at which corner it was previously (while still in its original hive) trained to enter. It is an advantage to have such colonies sitting beside one another for

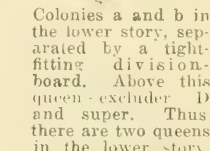


Two medium colonies, a and b, each crowded onto a few frames and left a few days. Notice the entrances d and e at opposite corners of the respective hives. The two colonies should be placed beside each other a few days before uniting.

a time before they are placed in one hive. This arrangement for medium colonies keeps the queens separate while the bees have free communication in the supers, the latter being managed like all others in one-queen



The two medium colonies are next placed in the same hive, separated by a tight-fitting division-board (D B), each having its own entrance, d and e, respectively. The division-board is left on the entire season.



Colonies a and b in the lower story, separated by a tight-fitting division-board. Above this queen-excluder D and super. Thus there are two queens in the lower story.

colonies. We have two queens in one hive and practically two queens in one colony. Above the excluder, it is actually in one colony. I have run such for comb honey without the excluder with fairly good results, but they will do better when run for extracted.

La Salle, N. Y.

[At first thought it might seem that in the spring uniting of medium colonies, the two queens being compelled to occupy the same story, would perhaps be rather crowded for room. (In the above drawings we have represented 10-frame standard hives instead of the eight Jumbo frames which we understand Mr. Greiner uses, but in either case the square inches of comb would be about the same.) If four or five combs should not prove a large enough brood-chamber for either colony, doubtless sufficient room could be given and the bees kept contented by exchanging some of the frames of brood with those above. Later, if the colonies should become large enough to warrant it, they could be placed in separate hives.—Editor.]

WHILE most beekeepers recognize the fact that there is a difference in bees and consider the Italians superior to other races, yet I feel safe in saying that most apiarists do not recognize the fact that there is a vast difference in Italians of different strains, and hence pay little or no attention to selection in breeding or in purchasing queens for requeening. It is common practice for many beekeepers to save queen cells with no regard to the merits of the stock from which they are taken. And, in buying queens, they order from the breeder who sells the cheapest, or perhaps from a breeder who is supposed to have good stock and they are satisfied that such stock is as good as any. Such beekeepers are apt to consider it too much trouble to keep a record of their colonies and of the pedigree of their queens.

Stocks That Deteriorate.

While I regret to say it, I am convinced that some commercial queen-breeders either pay no attention to the selection or have thru years of line-breeding or inbreeding allowed their original stock which gave them their reputation as breeders to deteriorate. I have in mind one breeder who is reputed to have very superior stock and from whom I have purchased queens off and on for the last 25 years. The stock originally was, without doubt, most excellent, but the queens received during the last few years have proved poor indeed and in my opinion are degenerated. This conclusion is drawn from my own observations as well as from reports from other beekeepers who have recently tried this same stock. Now this breeder is honest and really thinks he is offering high-class stock as he formerly did, but he has, I believe, practiced inbreeding so long that his stock has degenerated and he is depending on his past reputation as a queen-breeder.

I believe however that most queen-breeders by careful selection are constantly improving their stock, but what is needed is a general awakening among the rank and file of beekeepers to the importance of selection and improvement of their own stock. This can be done only by keeping a record of the performance of each colony and a record of the pedigree of each queen and then breeding from the best. Likewise careful attention must be paid to rearing drones from stock that has been thoroly tested. Every beekeeper who is striving for stock improvement, should read in the August, 1916, number of the American Bee Journal, Dr. C. C. Miller's article on this subject of drone selection, in which is emphasized the importance of rearing good drones for breeding. Contrary to general practice and belief it is conclusively shown that there is more to the

NOT ALL ITALIAN QUEENS GOOD

*Eternal Vigilance Necessary. Where-
in Some Queen-breeders Fail. A
Show-down of Best Strains.*

By Earl C. Walker

the queen but also upon the drone with which the queen was mated. In other words these workers have the composite character of their mother and their father, that is the drone with which the mother mated. But the drones of this same queen, since they spring from unimpregnated eggs, are not influenced by the mating of their mother. These drones are sons of their mother alone and depend for their character entirely upon her own blood without regard to her mating. Now since this queen is the product of the combined blood of her mother and father, she transmits to her sons the character of her dual parentage. In other words a drone gets its character from its grandparents. Hence it is clear that in choosing drones for breeding, we must estimate their value not by their mother or her colony of workers but must know the record of their grandmother and her colony.

I conducted the following experiment which to me is conclusive evidence that blood tells. In 1914 queens were purchased from three prominent queen-breeders in this country and also from one breeder in Italy, so that four distinct strains of Italians were used. During the first season the best queen of each strain was selected to be used the following season (1915) as a breeder. From each of these breeders, daughters were raised and mated with the best drones of my own stock. That is, an abundance of select drones were raised with a view of mating them with these queens. Ten of the best queens of each of these strains were used to head the colonies. This last season a careful record of each of these colonies was kept and the difference in pounds of honey stored by each strain is conclusive evidence that it is a mistake to think that "bees is bees." All these colonies were kept in the same yard and all were managed in the same way and given an equal chance. Extracted and bulk comb honey were produced by all but two colonies which were run for comb honey.

In setting forth the results, the three domestic strains of Italians are designated as A, B, and C, while the imported strain is designated by the letter I.

Strain A. Produced an average yield of 122 lbs. per colony. All were run for extracted except one which produced 97 sections of fancy comb. The best individual colony yield was 191 lbs. extracted, the lowest 90 lbs. extracted.

Strain B. All run for extracted. Average yield 86 lbs. Best individual colony yield 134 lbs, lowest 55 lbs.

Strain C. All run for extracted. Average

problem than simply rearing drones from a queen whose workers have a record as honey-gatherers. Such workers depend for their character not only upon

yield 58 lbs. Best individual yield 93 lbs., lowest 35 lbs.

Strain I. Imported. All run for extracted except one. Average 95 lbs. Best individual yield 152 lbs., lowest 39 lbs. The comb-honey colony gave 87 sections.

The best domestic strain A with an average yield of 122 lbs. contrasts strongly with Strain C, also domestic, with its average of only 58 lbs.; and as this latter strain C was bred from stock secured from the breeder referred to above as selling degenerate stock, it seems that my conclusion that such stock has deteriorated is well founded, for this stock once had the reputation of being superior as a honey-gathering strain and is still advertised as such. The leather-colored imported stock ranked next to the best domestic strain but fell short an average of 27 lbs. per colony, which if figured at 8c made a difference of \$2.16 per colony—more than the price of two good queens. The poorest domestic strain tested fell short of the best an average of 64 lbs. per colony, which in money meant a difference of \$5.12 per colony.

Now doesn't it pay to keep records? Isn't it worth the trouble to know what your stock is? Won't it pay to breed from the best; or, if you buy all your queens, is it not well to know by actual test the most desirable stock to purchase? Isn't there a vast difference in the strains of bees? Whether you raise your own queens or buy them, selection is important and you must keep everlastingly at it.

What percentage of the readers of this and other bee journals practice the most approved methods of management and use the best appliances obtainable and yet pay little attention to the selection and breeding of the best stock? Should not more emphasis be given this subject?

A Honey-Producing Contest.

Why not have a honey-producing contest similar to the egg-laying contests conducted annually by poultry breeders? Appoint some fair-minded honey-producer whose locality will support say 200 or more colonies in one apiary and invite queen-breeders to enter a contest such as suggested, each breeder to send free to said apiarist say ten queens

for competition in honey-producing. The honey-producer should handle all colonies in the same way and keep an accurate record of the yield of each colony. Would not a report of the performance of the bees of the different strains competing be of interest and value both to the breeders themselves and to the beekeeping fraternity in general? Why not make this an annual event?

The honey-producer conducting the contest should be impartial and should not himself be interested in breeding queens for sale. To eliminate any suspicion of partiality, it could be arranged so that the one conducting the contest would not know from what breeders the various strains of bees came. The queens from the breeders competing could be forwarded thru some disinterested party of recognized integrity who could designate the various strains by fictitious names or numbers or letters.

A prize might be offered to the breeder winning the contest, altho it would seem that any breeder would be glad to enter without other reward than the advertising he would get out of winning such a competition. The honey-producer's reward would be the ownership of the queens entered.

Now my only objection to contests of this kind is the chance of unfairness. Could such a competition as suggested be conducted in such a way that it would be absolutely fair and void of any suspicion of partiality? If so why not have it? Would queen-breeders sanction and support such a competition and would they be willing to have the results published? It might be well to publish the names of the three breeders whose bees made the best record and simply tabulate the result of the other strains by letter without giving the names of their breeders.

I am not breeding queens for sale, but for the last 26 years I have been interested in bees and their improvement. The test of the four strains as reported was made with the direct object of ascertaining their relative merits so that we might select the best to cross with our own stock, which has been improved by selection for a number of years.

Earl C. Walker.

New Albany, Ind.



EVERY so often, when our consciences become too active, we say to ourselves, "After all, the war must be fought in two places." Well, our boys are fighting it out in one place and no bluffing about it. How many of us honey-producers can say as much? Are we doing our work in the same humdrum fashion

IMPORTANCE OF MAY WORK

*Between Neglect and First-class Care
at this Time Lies the Possibility of
Getting a Half or a 100 per cent Crop*

By the Editor

of which we are capable?

Unless our actions are to belie our words, the month of May this year will see more thoughtful, thoro work done in the apiary

ion we have in years past, or is our every plan and every bit of work with the bees actuated by a definite vital purpose to produce every pound of honey

than ever before; for, in many instances this is the month which will determine whether we shall obtain a 50 or a 100 per cent crop.

At the beginning of the honey flow our hives should be overflowing with bees. The amount actually present will depend entirely upon our manipulations begun some six or eight weeks previously.

Give More Stores Than Needed.

Thruout the entire month, and until the honey flow, the colonies should be kept supplied with plenty of stores. At all times there should be at least from three to six pounds of honey in the hive—more if possible; for during spring breeding great quantities of stores are needed, full colonies some times needing three or more pounds each week. It is the stores in excess of their actual needs that stimulate the bees to increased brood-rearing. Therefore close watch should be kept in order that the stores may not run low and thus curtail brood-rearing.

If some colonies are short of honey, it is generally possible to find others in the apiary which can easily spare a few combs, and stores may thus be equalized. Otherwise it will be necessary to feed syrup or candy, which may be placed immediately over the brood-chamber and covered snugly.

Feeding Just Before Honey Flow.

If it should happen that the bees must be fed syrup or candy a week or so before the honey flow and after the supers are put on, it is preferable to feed candy; for as soon as the flowers begin yielding nectar, the bees will desert the candy. In case of syrup many would continue taking the syrup and neglect the nectar in the fields. One need have no fear that the bees will store the candy in the supers; for, as fast as taken, it will be used in brood-rearing. To feed candy when the supers are on, just preceding the honey flow, the feed may be placed on the bottom-board at the back of the hive; or, if desired, it may be put inside of a two-inch rim inserted between the two stories. Since bees are more liable to rob during the spring, the hives should not be open for any length of time. The entrances should be left contracted, and the feeding done toward night unless candy is given above the brood-chamber, when no special precautions need be taken.

Clipping and Re-queening.

Unless the laying queens have already been clipped, the work should be done during apple-blossom, while the weather is warm and some honey coming in. (See page 205.) Good queens usually begin laying toward the center of a comb and gradually work outward, leaving the eggs placed regularly, one in each cell, and almost no cells skipped. If an undersized queen with short abdomen is found, and the eggs are irregularly placed, such a queen is defective and should be replaced by a queen-cell from another colony or by a queen purchased from

a breeder. In case a queen is sent for, the defective queen should not be removed until the arrival of the new one. Rather than await the arrival of another queen, some would prefer to kill the undesirable queen and in a couple of days unite with an undersized colony. This may be done toward night by placing the queenless colony with some brood over the queen-excluder and the queen-right colony to be united, or they may be united by the newspaper plan, or by contracting each colony to five combs and then placing in one hive by alternating the combs with adhering bees. When uniting colonies that are far apart, they should be gradually moved a few feet each day until they stand side by side, facing in the same direction.

Expanding and Removing Packing.

Those brood-nests that were contracted last fall should be expanded as soon as the colonies become strong enough to cover more frames. As these combs are added, they should be placed at the sides in order not to divide the brood-nest. When expanding, it will be necessary to remove some of the side packing which fills the space made by removal of the combs last fall—all such packing may be removed if double-walled hives are used. It does not pay to be in too big a hurry about removing the top packing. In the northern states, probably the middle of May will be soon enough, and some seasons it may be well to leave it on until the first of June. Weak colonies that are in danger of being robbed or of having their brood chilled should have contracted entrances; but strong colonies may be given a full entrance a few weeks before the honey flow.

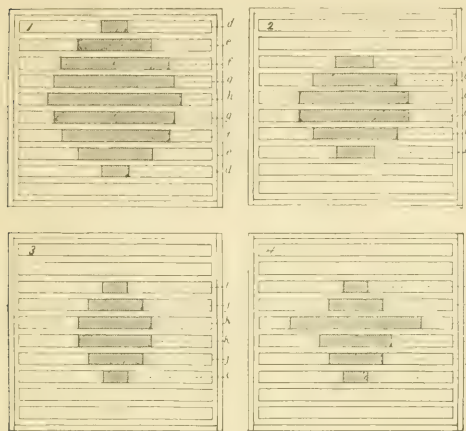
Equalizing Brood—When and How.

The inexperienced should be cautious not to equalize the brood too early in the season nor to give a colony more brood than it can care for. Every good comb of brood that becomes chilled means the loss of about a pound of bees that would have been at their best during the honey flow. However, as soon as the colonies have from five to eight frames of brood, it will be safe to take a comb or two of sealed (and preferably hatching) brood from the strongest and give two broods to each of the medium colonies, and one brood to those a little weaker. No colony should be given more brood than it can certainly keep warm. After the brood has hatched, the process may be repeated if necessary. This "equalizing of brood" should not be confused with "spreading of brood," by which plan empty combs are inserted in the middle of the brood-nest. In regard to the latter plan we have already given a word of warning.

In order to equalize the brood without danger of chilling it, it should be borne in mind that the cluster has somewhat the form of an irregular ball, often egg-shaped; and since the cluster is arranged so as to cover the entire brood, the brood itself has more or less the same form. Therefore

when looking straight down into the top of the hive, a cross-section of the brood chamber would show the brood arranged in the frames in the form of an oblong circle or ellipse, as in diagrams 1, 2, and 3.

When equalizing, sealed or hatching brood is preferred; and at this time of the season such combs are apt to be found near the center of the ball or sphere, and therefore contain the largest patches of the brood, some extending perhaps 11 inches in the longest diameter. Such a comb might safely be inserted in a brood-nest beside patches of brood of about the same diameter, or even at the center of such a brood-nest as shown in Fig. 2; but to insert it in a brood-nest



The above figures represent horizontal cross-sections of brood-chambers, the shaded portions showing the location of the brood in the frames. In figures 1, 2, and 3, it will be noted that the cross-sections of brood have more or less the outline of circles. The longest diameters of the patches of brood a, b, c, d, e, f, g, h, i, j, and k are 3, 7, 9, 2, 6, 9, 10, 11, 2, 4½, and 6 inches respectively. If it is desired to equalize the brood of the brood-chambers 1 and 3, brood h should not be inserted between k and k, which would give such a brood-chamber as that represented in 4, which is not circular in outline. Instead of this the third hive 2 should be opened, h exchanged with c, and c inserted between k and k.

similar to that shown in Fig. 3 would be quite foolhardy, as it would result in the bees spreading out to such an extent as to cause the chilling of patches (i) and (i) or the outer parts of (h). In such a case it would therefore be a good plan to go to a third hive and exchange frame (h) with frame (c) and then place frame (c) between frames (k) and (k), at the same time removing one of the outside broodless frames if necessary.

Cutting Out Drone Comb.

During the fruit-bloom, after the bees are in the best possible condition, queens clipped, colonies strong, stores and brood equalized, and brood-chamber expanded, there is still a very profitable piece of work that one can hardly afford to omit. In the lower corners of the brood-frames, along the bottom-bar, and at various other parts of the combs, will be found patches of drone-comb.

This excess of drones should on no account be tolerated (during the present year especially), and the warm spring days of apple-bloom is the ideal time for cutting it out and replacing with worker brood.

After cutting out the undesirable comb, that from which portions have been cut, should be used as a pattern and placed over the worker comb which is to be used for patches. With a knife the shape of holes may be marked on the under comb. Then removing the upper comb the pieces may be cut out, after which they are inserted in the comb to be patched. If they are small and fit in tightly, it may not be necessary to fasten them. Otherwise they can be held securely by means of wires wrapped around the frames, or if honey is coming in, the patches may be tied in with strings which will be removed by the bees as soon as they have attached the patches to the rest of the comb.

Giving Room Below and Above.

To move brood above too early in the season would be attended with danger of chilling the brood, since so much of the heat of the lower story would rise to the upper one. But two or three weeks before the opening of the main honey flow, if the strongest colonies become crowded with brood and bees and little particles of new wax appear along the tops of the combs, a super should be given immediately above the lower story; and if the crowded condition seems to warrant it, it may be advisable to place one or two frames of eggs and larvæ in the upper story, replacing with frames of empty combs or foundation. If the latter is used, it will be necessary to feed syrup in order to get the foundation drawn out. When some brood is thus kept in the second story, the bees become so accustomed to occupying the second story that when the honey flow comes they start to work in the super with energy and enthusiasm. A week or so after the opening of the honey flow, a queen-excluder should be placed between the two stories and the queen placed below.

Increase—Prevented or Made.

By tearing down queen-cells as fast as they appear, placing a few brood, or all but one, above, and filling the remainder of the lower story with drawn combs, it will doubtless be possible to prevent all increase during this month. Or, if increase is desired, the above plan may be used, only inserting a queen-excluder between the two stories and tearing down all capped cells. About eight days later the upper story may be moved to a new location and its entrance contracted to prevent the brood from chilling.

If these suggestions are conscientiously carried out in the northern states to which they apply, we believe that each beekeeper will be richly repaid for the extra time and trouble expended, and that many tons of honey will be added to our annual output.

Well, how about it? Of what does our patriotism consist of words or deeds?

FROM THE FIELD OF EXPERIENCE

CONVERSATIONS with DOOLITTLE

He Carefully Tells an Inquirer About Producing Extracted Honey

"The tide in beekeeping seems to be changing from that of section to extracted honey. Be kind enough to give us something in the May number of Gleanings about working for extracted honey, so that even the novice can make a success of it."

The work in early spring is little if any different when working for extracted honey than for section. All hives should be kept as tight as possible to economize the heat generated by the bees. Then each colony should have stores enough to last the colony without scripping till the first flowers yield nectar. This last is where many beekeepers "fall down." Fifteen to 20 pounds is none too much to allow from the time of the first flight in March or April to the time of fruit bloom, as rapid brood-rearing calls for much honey.

With apple bloom, all fairly populous colonies should have a queen-excluder put on the hive, and on this a hive of combs. If these combs contain 10 to 15 pounds of stores, so much the better, for, should this bloom fail to give the bees more than a living (as is often the case), the honey given will carry them over in good condition till the clover bloom. As soon as the lower hive is pretty well filled with brood, two combs from the same may be set in the upper one, taking from the upper hive two nearly empty combs to replace those removed from below. A week later three or four frames of brood may be exchanged in the same way. Thus rousing colonies may be obtained by the time the clover begins to bloom, without any of the colonies having any desire to swarm.

Colonies that have not yet arrived at sufficient strength to warrant one's putting a hive of combs on top, may safely be united at this season of the year by smoking and jarring in the dark of the evening, and then placing one of the hives on top of the other, with nothing between. The smoking and jarring cause them to mark their location anew in the morning. If one queen is superior, kill the other; if not, let the bees manage the matter.

If increase is wanted, this is easily made by setting off one of the upper hives in which we have set four or five frames of brood a week or two previous, giving each a queen cell nearly ripe about 6 P. M. and doing the setting off on a new stand in the twilight of the same day.

It is best to have plenty of extracting combs, and not let the bees run short of room; otherwise swarming may be the result. Queen-excluding honey-boards simplify the necessary work. If we want to secure the greatest number of pounds, we can extract when the honey in the frames is about

three-fourths capped over, as it is usually ripe enough at that stage to extract; but it is better to tier up and leave it on the hives until the end of the season.

In localities where there are two crops or more in a year, a light-colored, an amber, and a dark, with a dearth between, it is better to keep the two crops separate, by removing the light honey just before the other flow is beginning. In the hot weather usually prevailing in July and August, honey will soon ripen in the hive, and may be extracted when the combs are not more than half sealed over. At the end of the dark or fall flow it is usually cool to cold weather, and only the capped-over combs should be extracted unless we have a cheap home trade or can sell for manufacturing purposes.

Sell none but well-ripened honey of any color or flavor for table use, if you would build up and hold a profitable trade. In this way you will get a trade that pays. It is not necessary that honey be mild in flavor and white in color to be good. Many customers prefer good, thick, well-ripened buckwheat or goldenrod honey to that from clover or basswood. Some 35 years ago an old aunt came to see us and I took special pains to have some exceedingly thick basswood extracted honey on the table, as we had pronounced it the "very best ever." I noted that she ate sparingly of it. Presently she said, "Haven't you got some of that good, old, black, buckwheat honey? This white honey hasn't got any taste to it but sweet."

In taking honey from the hives, it pays well to have some bee-escape boards. I have tried most of the many kinds of escapes as they have been brought before the public, but so far consider the Porter the best. Put them in at any time when you wish to remove an upper story, and if there is no brood or queen above them, the upper stories will usually be practically free of bees in from 24 to 48 hours. Do not leave these boards on very long after the upper stories have been removed. Otherwise the bees are liable to plaster the inside of the escapes with propolis which makes the escape useless till the same is removed.

Extracting from the brood-chamber is seldom necessary or advisable, if good management is used in supplying upper stories of combs before those already on are crowded with honey. A small room made tight and warm by lining with heavy building-paper, lapping the paper well, and tacking lath over the joints makes a good place for extracting, either in summer or winter. If the weather is cool or cold, pile the supers of honey on a scaffolding, about head-height if possible, and heat the room to a temperature of 90 to 95 degrees from 18 to 24 hours, according to the length of time the honey has been exposed to the low temperature. Most honey rarely candies in the comb, and

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where the demand is for liquid honey, it is better to leave it there until wanted for sale or use. The 5-gallon screw-cap tin cans are good for storing in where it is to be handled for retail trade. Produce only a good, well-ripened article and sell it direct to the customer yourself at a reasonable price.

G. M. Doolittle.

Marietta, N. Y.

SUCCEEDS with COMB FOUNDATION

How One Beekeeper Gets Bees to Draw Out Comb for Extracted Honey Production

In the March issue of *Gleanings*, a statement is made that "It is not an easy matter to face the season running for extracted honey without drawn combs," and "The swarming impulse would be much greater when the bees had to draw out sheets of comb foundation in the supers instead of having combs."

I wish to take exception to both of those statements. A good beekeeper can take medium colonies of bees and by right management have at the opening of the clover-flow from six to ten frames of comb foundation drawn by each colony. Also the drawing of this foundation will help to keep down swarming.

According to my method, as soon as a colony gets the hive well filled with bees and brood, the second story is added. Two frames of bees and brood are raised from the lower story into the top one and two full sheets of foundation placed in the lower hive, with one or two frames of brood between them. The two frames of brood in the top hive should be together so there will be no danger of chilling the brood. In both stories the bees that are taking care of the brood will soon begin work on the adjacent foundation. In fact, they will draw out such foundation when they would not touch foundation in a super by itself. If one wishes to hurry things, he can go thru his hives in a week or ten days and raise more brood from below, substituting comb foundation.

This plan keeps the bees busy and gives them a place to store their surplus wax, also the queen is constantly provided with plenty of room for egg-laying, and, as a general rule, when a queen is busy laying, her colony does not swarm.

The past year I had about 80 colonies that I ran for extracted honey and they had no drawn combs, but drew all their extracting combs from full sheets of foundation. They averaged a little over 50 pounds to the colony. During the same season, 160 colonies that had drawn combs and did almost no drawing of foundation only averaged a little over 25 pounds to the colony.

Chapman, Kan.

Harry T. Huff.

[In the plan given above, we especially

caution the beginner that when foundation is given, there should be either a natural or an artificial flow of honey. Otherwise holes will be gnawed in the foundation and these spaces later filled with drone-comb.—Editor.]

GOOD ITALIAN STOCK WILL DO IT

Don't Get Scared, Don't Get Worried About European Foul Brood

It is somewhat amusing to read of the fears and lamentations of certain beemen over the advent of European foul brood. It reminds me of the time, several years ago, when the disease arrived in this locality and practically wiped out for me two yards of 100 colonies each. I surely was alarmed, to use a mild term, for it looked as if the end was in sight. Of course, I tried all the modes of treatment advocated by writers in the bee journals, and many others of my own invention. I tried the McEvoy treatment, the Alexander plan, stacking up brood over diseased colonies, and dozens of other plans with varying success; but still for a number of years there were many cases of the disease cropping out. I destroyed hundreds of dollars worth of brood combs, rendering them into wax, and, in one case upon the advice of an old beekeeper, even went so far as to attempt to burn a colony of bees, but nevermore.

However, the proverbial cloud had its silver lining. The bees recovered and so have I. In 1915 there was not a single case of foul brood in any of our five yards of about 400 colonies, and in two of these yards there has been none for three years. It came about in this way: the best Italian queens obtainable were carefully tested out in comparison with former stock with respect to vitality, prolificness, color, and honey-gathering qualities, only the best being reserved for breeders, and those of low vitality discarded. Furthermore, it happened that in the various manipulations of the bees I had acquired the habit of killing all queens whose complexion did not suit me or whose performance was unsatisfactory. The result seems to be that thru a process of selection and by the elimination of degenerate stock, a strain of bees has been secured which is practically immune to European foul brood. It is probable that if the remains of diseased larvae were fed directly to these bees, they might again acquire the infection, but under ordinary circumstances, it is believed that there is little or no danger. In fact I would not hesitate to purchase diseased colonies and bring them home for treatment.

Now as to the actual treatment of European foul brood. Don't get scared. Don't worry. Don't destroy combs. Don't burn or kill colonies of bees. Don't do that other

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fool thing—burn out the inside of your hives, for it does no good and it spoils the hive. Do this: (1) As fast as possible work into a good strain of Italian stock, getting rid of your blacks; (2) Dispose of your poor queens; (3) Examine all colonies frequently and do not permit any to become badly affected; (4) If you find a colony with European foul brood, nip off the queen's head and contract the hive entrance. In 10 days destroy the cells, and a week later set the hive and bees on top of another colony, preferably a strong one of Italian stock, with a sheet of paper between to prevent fighting. That is all, the bees will do the rest.

Of course, if your bees are nearly all diseased, as mine were once, the thing to do is to stack them up and keep them strong while you get in some Italian stock. Remember that the germs of this disease may be anywhere, but Italian bees of a good strain are not likely to become infected unless the larvæ are fed from the remains of diseased larvæ, those that have died recently; for it is probable that the decomposed or the dried up matter could not be so utilized, and it will in most cases be cleaned out by the bees within a few days. After an interval of two weeks there will be little or no danger of infection.

You cannot get rid of European foul brood by any known method and keep black or degenerate bees. Don't try it.

Valparaiso, Ind.

E. S. Miller.

PACKAGE BEE EXPERIENCE

Water or Liquid Feed Very Necessary for Long Shipments if Bees Are to Live

Having received perhaps more package bees at our Utah and Idaho apiaries during the season of 1917 than were handled by any other buyer in the United States during the same period, our experience may be of value to those who are now preparing bees for shipment in this manner.

First we would advise shipments before the hot summer weather is at hand, as our early packages were received in better condition than our late packages. If properly prepared for shipment, deliveries up to the middle of June ought to be in good condition. The risk increases during the hot days of July.

At no time during 1917 did bees reach us in good condition when shipped with feed candy only. Where candy is used it is of the utmost importance that water can be used also, especially where packages require four to seven days for delivery to distant points. Sugar syrup, however, may prove to be the ideal feed, replacing candy and water. We received a few such shipments and in very satisfactory condition, considering the warm

weather prevailing at that time. At this particular time packages containing candy, without any water supply, were arriving in very poor condition, many such shipments being entirely dead on arrival. Shipments with the syrup cans showed a decided contrast, as did also those with water cans, which proves to us that either water or liquid feed is absolutely necessary, except on shipments moving only a short distance. For experimental purposes we have shipped a carload of bees to California this year, where they will breed up earlier than in Utah. We propose to draw package bees heavily from them about the last of May, shipping them back to Utah with sugar syrup as feed.

Tags with printed instructions would be of considerable value. These should be of good size, with such wording thereon as follows:

DO NOT COVER WITH PACKAGES IN CAR.
DO NOT ALLOW BEES TO STAND IN SUN.
DO NOT DELAY EN ROUTE; RUSH DELIVERY.
SPRINKLE FREQUENTLY WITH WATER.
BEES MUST HAVE VENTILATION AND MUST
BE KEPT AS COOL AS POSSIBLE.

If the above suggestions are followed out, we are satisfied losses on express shipments will be largely overcome. Such losses should at least be cut in half, if not almost entirely eliminated. The construction of the package itself is of far less importance than the food supply given the bees during the journey. If properly provisioned to stand the trip, the bees should arrive in good condition in almost any kind of a package, so long as it is well ventilated.

Our receipts during 1917 were several thousand packages, to help offset a severe winter loss of about 60 per cent the previous winter. Packages to help replace this loss were received from such points as Texas, Georgia, Mississippi, Tennessee, California, etc., so that we have had ample opportunity to observe results. We have decided that the vital point hinges on the water supply, either in syrup form, or separate from the feed. Do not overlook the placing of proper handling instructions on the express shipments. The express employees should be educated as to the proper care that the bees should receive enroute to destination.

Ogden, Utah.

F. W. Redfield.

BEEKEEPERS' BOOKKEEPING

Directions as to How Keep Account of the Income, Outgo, and Capital Involved

Now that the Government demands a statement of the finances of every citizen with an income above \$1,000 for a single person and \$2,000 if married, every beekeeper should keep an accurate account of

FROM THE FIELD OF EXPERIENCE

money or its equivalent received and the amounts expended.

The beekeepers' fiscal year should start and end at the time of year when spring and winter losses of bees have practically ended and swarming begins. Thru the central part of the United States, I believe May 1 to be the proper date. On that day take pencil and paper or book, and start the invoice. Count all live colonies of bees. If producing comb honey, let two supers be considered as part of a colony of bees. Figure the value of your bees at prices for which bees are selling in your neighborhood. Count all extra hives and supers and place their value opposite the number. List your extractor, tanks, gas engine, wax press, tools of all kinds pertaining to the bee industry; also cans, shipping cases, wax and honey left over, placing their value on the left-hand side of paper.

Every thing you possess of value in connection with the bee industry should be listed in this invoice and its present value set down. These things are not taxed under the income law, but only the income derived from the sale of the bees or the sale of what they produce. This invoice furnishes a foundation on which to start a simple set of books in which to keep accurate account of your bee industry.

The books needed can be obtained at 89¢ per dozen. They have pasteboard backs or covers and are listed as "Bookkeeping Blanks." Those marked "Day Book" will answer for all purposes. Write on the outside of one, "Ledger," and use it for a ledger. On about the third page of this ledger, write above the top line "Bees." On the first line intended for accounts, write "May 1, 1918. By invoice, 100 colonies of bees @ \$6.00, \$600.00." Charge the \$600.00 in the first column intended for figures. The top of this first column should be marked Debit (Dr.); and the top of the next column, on the same page, should be marked Credit. (Cr.) If you buy any bees during the year, charge "Bees" with the number of colonies purchased at the price paid for them. But do not make any entry of the swarms you have during the season: they will be counted and entered at invoice next May, 1919. If you sell any bees or queens, credit "Bees" with the amount you sold.

Turn over a leaf and write at the top "Supplies and Tools." Charge or debit "Supplies and Tools" with extra hives, extractor, hive tools, smokers, every thing used for keeping and working with bees, and for securing the honey and the wax.

Turn over another page and write "Honey and Cans." Charge "Honey and Cans" with cans on hand; also with all salable honey left over, at the price for which it can be sold. The cans or cases purchased this year must be charged to this account. Also

charge this account with freight paid on cans or cases, as it is a part of the cost of the cans or cases. All the honey sold during the year must be credited to this account, and the freight or postage paid to ship the honey must be charged to this account.

Turn over another leaf and write "Wax." Look on your invoice and, if you had any foundation on hand, charge it to "Wax." If any wax is left over, charge it to "Wax" at market price. All the foundation you buy charge to "Wax." All the wax you sell, or have made into foundation, or trade for other goods, credit "wax" with the value of it.

Turn over another leaf and write "Expense." Charge "Expense" with hired labor, gasoline, cost of fixing broken tools, etc.

If you peddle your honey or sell it in small amounts, mark one of the day books "Honey Sales," and set down in this book every sale you make; and at the end of the year, transfer the total amount of the sales to the ledger to the credit of "Honey and Cans."

Mark one book "Day Book" and set down each day the things you pay out money for and the things you sell, exclusive of the honey sales, which are set down in the book marked "Honey Sales." At a convenient time, transfer these entries in the day book to their proper place in the ledger. Always set down the date in the day book and the ledger.

If you sell honey on credit to some of your customers, enter the sale in your "Honey Sales Book" in this manner: July 30, 1918. John Doe, Dr., 4 10-lb. cans honey @ \$1.25, \$5.00. When he pays you, mark somewhere in the above account in large letters, "Paid." The sale of honey is on record in your "Honey Sales" book and you can readily see if it is or is not paid for. If paid, you need not have any account in your ledger with John Doe.

Use one of the books for your invoice.

Use one in which to keep addresses of your customers, and also of firms with whom you wish to do business.

Do not mix farm accounts and bee accounts.

At the end of the year, ask some friend who is a bookkeeper to carry your accounts to "Profit and Loss," and to close your books for you. Then you will know just what your bee industry is worth. The same friend will tell you what expense to subtract from your income, and whether or not you owe any income tax. C. R. Parks.

Ft. Duchesne, Utah.

[In the ledger, instead of the account "Honey and Cans," some might prefer the two separate accounts "Honey" and "Cans and Cases"; and then at the end of the year charge the "Cans and Cases" to the account of the honey.—Editor.]

FROM THE FIELD OF EXPERIENCE

NUCLEI—NOT POUND PACKAGES

Experience of this Beekeeper is all Against Pound-Package Shipping

After having had the experience of working with over a thousand one-pound packages of bees shipped from different breeders of the South to a company operating in Ogden, I have decided to tell you why I prefer the nuclei to the pound packages of bees.

I find that, owing to high express charges, most Southern shippers try to ship in too small packages. The result is a heavy loss on their part and dissatisfaction on the part of the receiver. One-third to one-half came dead. Some were supplied with sweetened water, some with candy, others with chunk honey. The last had pounded all around in the cage until the larger part of the bees were killed and the residue were so smeared as to be worthless. What does an express agent care whether they stand on end, upside down, or any old way? In the cases in which water was used, the cans had sprung a leak or become clogged, and the bees were dead.

Of all the methods employed, those shipped with a can containing water sweetened with honey came out best. But that is no guarantee that they will arrive in good condition. Besides this loss of bees, it was found later that the queens were more or less damaged, as they were almost immediately superseded.

In my own yards I used the one-frame nuclei purchased from a distance of 800 miles. They were shipped in a redwood box 12

inches wide, 18 long, 9 deep, with a partition in the center, and one-frame nuclei in each side. The express on each box was 50 cents; but there was no loss whatever. Bees, honey, and all, were on one Hoffman frame—no leaking of combs, no suffocation.

The oldest head of beedom will tell you that bees in nucleus form with queen is the only way to ship; and when a receiver would tell us that pound packages are cheaper than nuclei, we feel certain he has not had the experience in handling both that I have had. This year I am sending to the same company again. They are the only ones I have found who advertise pound packages and then send one-frame nuclei with a smile. Why. He knows—satisfaction. N. T. Spangler.

Tremonton, Utah.

[There can be no question but that a pound of bees will travel better on a frame of brood and honey than in any combless wire-cloth cage that was ever invented, whether it has a water-bottle, bottle containing syrup, or a compartment for bee-cage candy. Our experience is that a nucleus will travel safely many hundreds of miles with a loss of less than one per cent, while bees in cages without combs will have a mortality of from 33 to 50 per cent. Why then should combless bees be the prevailing method of shipping? For the reason that bee disease is so prevalent that it is unsafe to ship combs from one locality into another. The consignee always takes a risk when he takes bees in nucleus form.—Editor.]



Altho blind, Chas. Kirk of Embro, Ont., (at the demonstrator's left) is running from fifty to sixty colonies of bees and is making good in spite of his handicap.

THE Swiss Bee Journal says that scientific authorities reckon the value of the bees' labors in fertilizing blossoms at five times as much as their value in gathering honey. In this country it's reckoned at twice as much, isn't it? Probably it isn't an easy thing to have any very definite figures in the matter, but it would hardly seem that there's anything extravagant in saying that the fertilization of flowers is twice as important as the honey. [We have seen no estimate in this country of the relative value of bees' pollination work and the amount of honey they gather. From the little we know of the subject, we should be inclined to favor the estimate as quoted from the Swiss Bee Journal. We do know that the presence of bees in some orchards and in some localities makes an astonishing gain in the amount of fruit produced. We have seen that right in the vicinity of Medina.—Editor.]

* * *

Dr. H. W. Wiley says in March Good Housekeeping, page 44: "Another thing which should be fully understood is that there is no common sweetening agent except sugar which is of any value whatever. When we are officially advised to eat 'corn syrup' and save sugar, this fact ought to be known: there is no such thing as 'corn syrup' on the market at retail. This term is applied sometimes to the commercial commodity known as glucose. When I went into the stores and asked for 'corn syrup' I was uniformly handed a can of 'karo.' I sought in vain for the term 'corn syrup' on the label. Karo is glucose which has been sweetened with sugar to make it edible. Bees will not eat glucose by itself. If glucose is mixed with 50 per cent of sugar, bees will eat it. If the Government knows these facts, it should publish them."

Of course Dr. Wiley knows about the value of honey as a sweetening agent, but probably does not consider it a common sweetening agent. Which is true, and "pity 'tis 'tis true." Our bit is to make it more common.

* * *

"The European foul brood is not nearly so prevalent as the American. It is always found in unsealed cells and is a light-yellow color, instead of the dark, dirty, brownish color. While the American foul brood is found at all times of the year, the European is found only at the first of the season before the honey flow."—The Beekeepers Item for March. It is perhaps a common belief that in European foul brood no diseased brood is to be found in sealed cells, for a superficial examination shows nothing wrong with them, but dig away the cappings and you will find a goodly proportion of diseased

STRAY STRAWS

Dr. C. C. Miller

brood in cells that are nicely sealed over. Neither is it correct in this region to say that European foul brood is found only before the honey flow. Does

the warmer climate of Texas make a difference? [It is a little too strong a statement to say that European foul brood does not appear in sealed cells. There is too much testimony that proves to the contrary. Another thing, it should be noted that European foul brood in a few cases takes on the appearance of American in that it ropes almost as much.—Editor.]

* * *

You never know what Allen Latham will be up to next. Now it's honey in a form not commonly found. He has sent me a pound bottle put up in attractive style, a blend of clover, sumac, and goldenrod. The flavor is excellent, yet I've eaten honey of equally good flavor. The thing about it that I'm not sure I ever met before is its texture, and in that it seems to me he has struck something big. He says: "I cannot bear the sandy, coarse-grained candied honey that one often meets. I much prefer liquid honey, or honey in the comb; but I am very fond of this velvety consistency. I get this by seeing that my honey is well ripened, and by giving the honey two or three stirrings as it candies. When it has acquired the appearance of new soft soap—you know like what our mothers used to make in the back yard—I pour it into the receptacles, for after that it will stiffen up in a very few hours. It generally takes from one to two weeks to candy the honey if conditions are favorable."

The even, soft texture, what he well calls "velvety consistency," it seems likely should remove the objection any one could have to granulated honey. At the ordinary temperature of the dining room it spreads perhaps more readily than butter, without the nuisance of dripping as comb honey does when spread. The question is whether the same result can be obtained with honey in general. I don't know. He calls it "honey-butter." I don't altogether like the name. Across the water "honey-butter" is made by adding an ounce of honey to each pound of butter. [Mr. Latham's idea, we believe, is all right as we have done something similar.—Editor.]

* * *

That very practical beekeeper, E. D. Townsend, says, Domestic Beekeeper, page 83: "Several colonies were wintered during the winter of 1916-17 with queen-excluders on. Some were left on the same as during summer, others were turned the other side up, throwing two bee-spaces together. On top of the excluders quilts of factory were placed to keep the chaff packing from trickling into the hive. This year likely three or four

hundred colonies are wintering with excluders on the same as summer. With this free passage of bees over the top of the frame, less bees are cut off from the cluster by changes of temperature and lost. We shall pack more colonies with queen-excluders on another fall." [This is only another way of providing space over the tops of the frames during winter. Practically all authorities agree that this is essential and necessary. The kind described by Mr. Townsend, however, may be very simple and easy to apply, because one already has excluders on hand if he is running for extracted honey.—Editor.]

* * *

Old Smithers had to hiccough,
When extracting honey,
At each frame he'd piccough;
Wasn't that too foney?

* * *

"It does not do much good to take two weak colonies from remote parts of the same apiary and put them together."—April Gleanings, page 206. That's because the bees will return to their old location. But you will partly or entirely overcome that, if you put a newspaper over the colony with the best queen and set the other over it, especially if you make this last queenless two or three days in advance. The bees being imprisoned until they gnaw a hole in the paper, will, upon releasing themselves, mark their new location and stay put. [But can you recommend putting two weak colonies together with a newspaper between in early spring? Is it not true that the cluster may be so weak that they will not work thru the paper? We have never tried it in the spring and therefore do not know.—Editor.]

* * *

That discussion as to elimination of drones by the location of the entrance (April Gleanings, page 211) is very interesting. It raises some questions. When bees build drone-comb at the lower corners, are you dead sure it's because those corners are near the entrance? When the warm system is used, with side entrance, do the bees have drone-comb just as certainly and just as much at the middle of the bottom-bars as at the end? According to the entrance theory, shouldn't there be more at the middle than at the ends? After all, do the bees generally build drone-comb at the lower corners? When I got that far I thot I'd let the combs answer for themselves. So I went down cellar and examined the first 16 combs I came to. They were old, black combs, and here's what I found: Five of them had a decidedly objectionable amount of drone-comb at the lower corners; two of them had a little at both ends; five of them had a little at one end; and four of them had none at either end. That is, of the 32 lower corners of the 16 frames, 10 were bad with drone-comb, 9 had a little, and 13 had none. These combs had been in use pretty certainly 20 years or more, and it is hardly possible that in that time none of the 13 corners without drone-comb had ever

been at the entrances, so it does not seem that corners at the entrances are so universally furnished with drone-comb as the inexperienced would be inclined to believe from reading the discussion.

Perhaps I may be pardoned for saying how the thing looks to me. Nowadays bees are limited as to drone-comb, and are anxious to build it wherever they have a chance, and they'll build just as well in the middle of the brood-nest as at the entrance, if they have the same chance. They prefer to have a space left between comb and bottom-bar, and when given foundation clear to the bottom-bar in a slack time they will dig away the foundation to leave that space, and will dig away more at the lower corners than elsewhere because that's more out of the sphere to which they tend. Then when flush times come, and they hunt every spot to build drone-comb, that open corner is very inviting. But once that corner is filled with comb, will the bees dig away the solid comb to replace it with drone-comb? I don't know, but I doubt. If they don't, then the remedy is easy! just plug the corners with old worker-comb. [It will be remembered that in our April issue we did not offer an opinion as to the effect of the position of the entrance upon the building of drone-comb in the corners of the frames. What you say in this last paragraph seems very reasonable and possible. We hope, however, that our readers will test this out because it is a very important matter. If drone-comb can be eliminated by the A. C. Miller plan it is important to know it. If it can not be eliminated by his plan, then we should know that.—Editor.]

* * *

DeWarren B. Davis, you wonder, page 230, at my not painting hives, and query whether it's locality. Likely. If I were in your locality where "an unpainted hive is fit only for kindling-wood after two years of use," I'd surely paint. But here an unpainted hive is good for 25 years, or until the inside of the hive gives out, so painting is hardly economy. And when a painted hive is the only one to have moldy combs in the cellar, the economy seems still less.

* * *

Stancy Puerden refuses to pronounce the word "vitamine" until some dictionary lists it. We'd be in a pretty fix if every one should be of the same mind, for dictionaries list words only after they have been pronounced. If she thinks she can write so interestingly that what she says must be read aloud to the whole family, and then sprinkles a word all over the page expecting that word to be skipped each time, she's mistaken. "In this locality," rather than to skip the word, we call it vi-ta-min.

* * *

Jas. Bachler, page 234, I don't have rheumatism, and I think it's somewhat due to the honey I eat, and also to some of the other things I don't eat.

WE have lost in wintering up to Apr. 1 about five per cent of our bees—somewhat more than usual. The intense cold of the past winter has caused

a larger consumption of stores which has resulted in a good many cases of starvation; but April is here at last, the snow is gone, and the bees once more filling the air with their gentle hum. I wonder if there is any one so unresponsive to their environment as not to feel the thrill of a new life when all about us is throbbing with the fresh new life that April brings to us.

* * *

I am glad Mr. Latham has pricked the bubble of a "let-alone hive," page 216. The inspector sees so many "let-alone hives" in his rounds that they possess no charm for him. "Let-alone hives" and "fool-proof hives" should both be relegated to the rear in these days of bee diseases.

* * *

We have recently purchased a small yard of 26 hives. Seventy per cent were dead and those left were in poor condition, as the result of attempting to winter in large brood-chambers and without sufficient packing or stores. We always find something to learn in looking over our neighbors' yards that have met with misfortune or neglect.

* * *

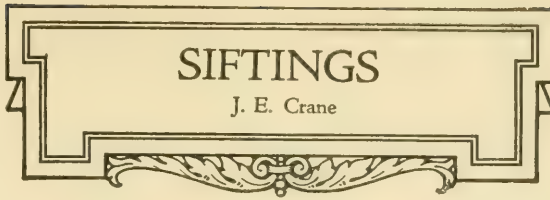
As restful as robin songs in spring time, after the long, bleak, snowy winter, are the warm colors of the cover page of *Gleanings* for April. Again and again have I turned to it to rest and refresh myself and assure myself that the winter is over, the snow melted and gone, that green fields and opening flowers are before us. [You, Mr. Crane, have caught the exact idea and have experienced the exact feelings the Editors had in mind when selecting that April cover design.]

* * *

Dr. Miller quotes A. I. Root as saying, "There is no easier, quicker, and safer way of feeding bees that are short of stores than to give them sealed stores of honey," page 218. This is quite true; but how are we to proceed when we have no sealed stores, as often happens in spring time? Where quilts or cushions are used over brood-chambers we sometimes use granulated honey on top of frames very satisfactorily or fill combs with inferior honey or sugar syrup and feed same as sealed stores, but sealed stores are the best.

* * *

There is doubtless a tendency in building new combs for bees to draw in the lower corners, especially near a large entrance, as suggested by A. C. Miller, page 212, and



SIFTINGS

J. E. Crane

later filling in with drone-comb. If the space is small, it seems to satisfy the instinct of the bees for drones, and does little harm; but if the patch of drone-

comb is large, we have been in the habit of cutting out a triangular piece and inserting a piece of worker-comb in its place resting on the bottom-bar. Such insertions are rarely gnawed out, and the drone-comb removed is rich in wax and pays well for the work.

* * *

I have a great deal of respect for Mrs. S. Wilbur Frey, page 214, if she can accomplish all she claims on pages 214 and 215 in "a poor season." "During the entire season," she says, "there were only a few good days that the bees were able to gather honey, and the farmers had plowed up their lands for cultivated crops, . . . there is a little basswood, a few red raspberries, and here and there a buckwheat field, that yielded very little last year." She also assures us that she secured but little from fall flowers as compared with ordinary years, as her combs were full of brood, and yet she secured from colonies run for section honey an average of 50 lbs. surplus per colony and enough to winter them, and an average profit of over \$7.00 per colony. Is not there some mistake about this that is likely to deceive young beekeepers? A season when a yard of bees gives a profit of more than \$7.00 per colony can hardly be called a poor year.

* * *

I am surely grateful to Dr. Miller for his more complete method of the treatment of European foul brood on page 218. I had supposed that to make the caging treatment successful it was necessary that all foul brood cells must be cleaned out and polished before brood-rearing was begun. But now we are given to understand that it is only those that have died at a certain age and turned yellow that spread disease. There appear to be a good many mysteries connected with the spread of this disease that it would be a comfort to have cleared up. How long does the virus live under different conditions? What conditions are most favorable for its development or its death? Some years ago a teacher in our graded school asked for a single-comb observation hive. I selected a suitable comb, and while getting things ready dropped the comb for a little time into a hive that proved to be infected with European foul brood. I expected this comb of brood would soon develop disease, but I found no indication of disease that season. However, the next spring it came down with a virulent form of European foul brood, so bad that we did not attempt to cure it but destroyed it—combs and all.

"GIVE us this day our daily bread." I wonder how many readers of Gleanings have ever attached any particular significance to the above line in our Lord's Prayer. I for one have always repeated that part in the most perfunctory manner. To me it was somewhat like "grace" at the table. It seemed like a graceful acknowledgment to the Creator that we are indebted to Him for our food and daily comforts, a reminder that in olden times there was sometimes a scarcity of food. That people in civilized countries should ever regard it in the light of an earnest petition did not occur to me.

You may have noticed that the Food Administration has recently sent out speakers to every part of the country to tell of the urgent need of food conservation. A commission of six has recently returned from France where it was sent to see conditions and report what it actually saw. The members of this Commission together with other speakers have been making this speaking tour.

The speaker assigned to our town was a woman, and the address was well advertised for weeks in advance. It was at the courthouse, and on our way there we had to pass our local picture theater. Now I have no objection to a good picture show. The children and I go occasionally and we enjoy it, too. But I did not enjoy seeing crowds of people around the entrance to that picture theater, waiting a chance to get seats, while at the courthouse a few people at a time were drifting in to hear a speaker sent out by our government to talk on a most important phase of war work.

Now I wish to tell you a few points that this speaker made. If people in other towns turned out in the proportion that they did here, there is little chance that I shall be repeating anything you have heard before.

A Hero of France.

Let me begin by telling you a little story. The members of this Commission were invited to witness an unusual occurrence "somewhere in France." A private soldier was to receive a decoration. Previous to this he had received all the decorations for bravery which France had to bestow, and so the authorities had to get together and decide on a new decoration. The deed which called for this last decoration was this: There had been a sharp engagement and when the soldiers returned to their trenches their colonel was missing. This man, Henri Andre, volunteered to go back out in "No Man's land" in search of him. He finally found him in a shell hole, paralyzed by a shell wound in his spine. Henri managed to get

OUR FOOD PAGE

Stancy Puerden



his helpless colonel on his back and started crawling back to the French trenches. When they had gone but a short distance, the slowly moving figures

were discovered and the boches opened fire on them. Henri's hand was shot off, later his leg was broken in two places by shots, and, if I remember the story correctly, he received some other wound. But in spite of his terrible wounds and the burden of his helpless colonel on his back, he crawled back three hundred yards and saved his officer's life and his own.

When Henri Andre came to receive his decoration he was dressed in an old civilian uniform, one arm hung limp, and he was on crutches. France cannot supply new uniforms even to the soldiers she decorates for bravery. When he went home a little woman in a sunbonnet and several little children were with him. His home was a little hut, which had been built after his house had been destroyed by enemy shells. Later on in the evening when the members of the Commission were talking to the commandant, a messenger came to see if he could get a bread card. The commandant told him he was sorry, but it would be irregular to issue a card at that time. On inquiry it was found that the card was wanted for the family of Henri Andre, that when their ration of bread was issued the day before the children were so ravenous with hunger that they had found and eaten it all, and now the family of the hero whom France had decorated with all the medals she had to bestow and for whom she had then devised a new decoration, was hungry. One of the Commission immediately put his hand in his pocket and suggested that they go out and buy bread for the family. The commandant told him that bread could not be bought in France without cards.

Hungry Children.

May I tell you one more story? The members of the Commission were present when a line of little children came up to receive their bread ration. By the way, that bread was twenty per cent wheat flour and eighty per cent substitutes. An inspector stood by the line and occasionally he bent over and scrutinized some child sharply, felt of his flesh, and then pushed him out of the line. The children who were treated in this way went away crying bitterly. A member of the Commission asked why this was and was told that these children looked strong enough to endure twenty-four hours longer without bread, and so were sent away without it. And yet we find people in this country who are unwilling to substitute grains just as high in food value for part of the

wheat, that we may send it to the hungry children of France.

The speaker further told us that the allied world is on the verge of the greatest famine ever known. Remember famine does not begin when the last ship is sunk by the submarine. It begins when the food supply falls below normal, and it has been below normal for months in France and England.

The pity of it is that you who read such an article as this are not the ones who need it. You are already trying to carry out the wishes of the Food Administration. But there is something you can all do to help. Won't you make it your business to see that the terrible need of conserving wheat is carried to every part of your community? Self-interest, if nothing higher, should dictate that we implicitly obey the directions of the Food Administration. Our Allies must be fed. "We must go on or go under."

Money Versus Food.

Don't, please don't, confuse the saving of money with the saving of food. It is food of which our allies are in such dire need. It probably costs you a little more to use the substitutes than to use the wheat flour. That is one of the sacrifices you and I must make to win this war. When men are dying at the rate of 100,000 a day, when their blood flows in the trenches like water, are we going to shirk our part?

The stories which come to me of late of people who are defeating the purpose of the Food Administration by purchasing the wheat substitutes and then throwing them away, make my heart sick. We have no right even to feed them to chickens. It is up to us as patriots to eat those substitutes and buy more feed for the chickens.

A certain Hungarian, who has not lived in this country many years, is a better American than many who were born here. His wife had been making her bread largely of cornmeal. One day she said, "I am becoming so tired of cornmeal in bread that I don't believe I can eat any more of it." "Yes, you can," said her husband, "it is our duty to eat the wheat substitutes, and we are going to do it whether we like them or not; and we should be thankful we are living in a country where we have enough to eat, even if it is not just what we like best."

The Food Administration is now asking us to get along with 1½ pounds of wheat products per person a week. Possibly by the time this is in print the amount will be even less. We must send the most concentrated foods to our Allies when there is such a ship shortage and their need so great. Corn cannot be shipped at all at this time of year, as it is the germinating season and it would spoil in transit.

Try weighing out wheat flour enough to make 1½ pounds per person in your family, and then make up your mind to use as much less as possible in one week. For weeks back we have not been using that much in the Puerden family, and we are in the best of health. During the Civil War

the Southern States managed to get along without wheat for three years, and we can do the same if we have to. Wheat bread is not a necessity but a luxury.

For the sake of the health and well-being of your family you should make what bread you use at home. Many of the bakers, in deference to the wish of the public for perfectly white bread, are using corn flour as the wheat substitute. Don't feed your children corn-flour bread if you can help it. They need bread made from the tissue-building parts of the grain. Cornmeal is good, but corn flour has been robbed of the best parts of the corn in the milling. It is little better than cornstarch.

If you become very hungry for white bread, try the recipe for oatmeal bread which I am giving this month. It tastes very much like ordinary white bread and yet uses about one-third part oatmeal. The rolled oats also may be added to an ordinary white bread recipe without the preliminary scalding, but in that case it is well to put it thru a food chopper first.

Make your muffins and quick breads wheatless, if possible, in order to save what little wheat flour you use for your yeast bread. It is not hard to make all desserts wheatless if you use your ingenuity. Last winter we were asked to make our cakes sugarless and eggless, and now we may use plenty of eggs during the spring season and a moderate amount of sugar, but no wheat.

Don't be afraid to try those barley-flour cakes. The recipes were worked out by an expert of the Food Administration and they are delicious. I have tested them, and let me tell you something—I am the sort of woman who needs fool-proof cake recipes. The one for drop cakes I changed slightly in order to use honey instead of sugar.

OATMEAL BREAD.

3 pints rolled oats	1 cake dry yeast soaked
2 tablespoons honey	in
1½ tablespoons salt	1 cup warm water
3 pints boiling potato white flour	

When preparing the evening meal pour the boiling potato water over the oatmeal, honey, and salt. When lukewarm add the yeast softened in the cup of warm water. Beat well and set to rise in a warm place. At bed time mix in enough flour to make a rather stiff dough, and knead well. Flour as now milled has not the absorbing power that it formerly had and therefore all bread should be mixed stiffer. Cover the broad raiser and leave over night. In the morning divide into loaves, let rise again until doubled in bulk, brush the loaves with melted shortening, and bake. This should make four large loaves. The sponge may be started late in the evening and the flour added in the morning, if preferred.

APRICOT OATMEAL BATTY.

2 cups cooked oatmeal	½ cup honey
1 cup cooked apricots	½ teaspoon cinnamon
½ cup raisins	½ teaspoon salt

Mix the above ingredients lightly and
(Continued on Page 313.)

ONE day at the very end of March, I went a few miles out of Nashville to examine some bees for the widow of a late side-line member of our association. It was a perfect day in apple-blossom time. On my way out it was borne in upon me once again that beekeeping is one of the few side lines that are utterly at one with the beauty of the earth. It takes us, of necessity, out into the suns of spring and summer, and makes us eager watchers of the procession of the flowers. Talking shop with beekeepers means always some mention of budding maples and apple-bloom, of clover fields or sweet singing locust or the golden-rod and wild asters of the autumn.

It is partly because of this natural connection of bees with the beautiful things of earth, and partly just because it is spring again, that I come renewing my plea for beautifying our beeyards. Of course this means side-line yards chiefly. Extensive commercial beekeepers must concern themselves (poor things!) with outyards and trucks and labor and doing things on so big a scale that nasturtiums and daffodils and gay hollyhocks must be left quite out of their plans. But it is different with those who keep a few stands of bees at their own homes. Neat, well-painted hives really add of themselves to the attractiveness of any yard. Put them under your fruit trees, near the young grapevines; set out syringa or bridal wreath or lilac near; put in some narcissus bulbs or iris; let honeysuckle climb over the fences and have roses all around. Then will your apiary be a thing of beauty, a lovely spot where the very work is rest. If your real labor lies amid the glare and roar of the city, here you will find healing for your soul.

Then on my way back that day another thing came to me forcibly. Better have two colonies and give them good care and attention than have 22 partly neglected. In this particular case, the sad and sudden death in July had naturally left the bees without any fall attention—in fact, with supers piled almost to my shoulder. But this side-liner was a very busy man (and a very good man) and last summer he had frankly admitted not having examined some of his brood-chambers for two or three years. It wasn't strange I found them so difficult to get into. Strength and ingenuity were sorely taxed in prying off supers and almost exhausted in pulling out brood-frames. Outside combs clung to the hives—and broke—and almost spoiled the party. Queen-excluders were nearly solid with propolis. A good many colonies had died. Roaches were plentiful in others. Bees were cross.

Let us be very careful, we side-line beekeepers, to increase our yards only to the ex-

Beekeeping as a Side Line

Grace Allen

tent that we can continue to give them good care. If we have time to give good care to five colonies or slipshod to ten, five is our logical limit.

Because we may have made a success of 20 colonies, it does not follow that we will make a success of 30. If we are wise, we will inventory our hours carefully, and not increase to the number that compels carelessness or neglect.

Undoubtedly side-line beekeepers as a whole are inclined to spend more time with their bees, per colony, than is required, or even advisable. That is partly because of love of the work, and largely because of a lack of efficient methods—a regular worked-out system. It is not good for the bees to be constantly opening their hives and interfering with their own schedule. Neither is it good to leave them too much to their own devices, not knowing oneself what they are about. Hives do get hard to open and frames difficult to manipulate. Bees are more resentful of inspection when they don't get it often. Hives may become crowded. Unexpected swarms issue, weakening the colony. Disease may get a start. Truly, better two colonies well cared for than 22 half-neglected.

* * *

Oh! the blossoming trees, the blossoming trees,
That waft all the scent of their souls on the breeze,
And blend the spring rapture with beauty sublime
And sweetness that haunts us like music and rhyme!

* * *

For Dixie Side-liners.

The rest of this concerns Dixie side-liners. Did you notice how M.-A.-O. squealed on page 256, April, just because he was "squoze"? And did you happen further to notice that in that same issue the Dixie Bee just quietly died, without even a squeal? She didn't know she was going to die, she doesn't quite know why she did die, but die she did. The Editor says so. Hereafter if any Dixie bee wants to go humming thru a page of Gleanings, it has to be in this side-line department. So, if nobody minds, we'll start in right now. [No—Dixie Bee isn't dead, nor shall she die. This queen has merely been "transferred."—Editor.]

We are all intensely interested in this Southeast in whatever experiments have been made with winter packing, and are asking one another how it turned out. There have been letters as well as personal inquiries about the results here in our own yard. Last month I had high hopes for our one quadruple packing case. Our county association met last week, on Apr. 6, and, as I had been asked to give a report on this winter packing, I opened the big case the day before. Today I looked into one hive that snuggled a' winter by itself in the center of a big box, with inches and inches

of dry leaves above and under and around. So far I am disappointed. One colony in the big case died, neither from cold nor starvation—probably lost its queen. The others are fairly strong with bees and have plenty of stores. They are not, however, any stronger in bees than some of the colonies that were not packed. I think they average somewhat more stores than the others.

But what is most discouraging is that brood-rearing is behind. At this time of the year, the most satisfactory colony is the one that is rearing the most brood, as the honey flow is almost upon us. (In fact, white clover is already coming into bloom, incredibly early as it may seem. I picked my first white clover bloom on Easter Sunday, March 31.) The packed hives are certainly behind the unpacked hives in brood-rearing.

Now I know this question isn't settled yet, and I intend to try out this very case again. I really had hoped big things for it and haven't given them up yet. To date, however, they have not materialized.

But the little experiment with upward ventilation did all I hoped for it. There was not a moldy comb in a hive where the sealed cover was replaced by burlap, over which was a super of leaves. There were six of these and another fall there will be more. All moldy combs in the yard were under sealed covers. Yet this experiment is not conclusive, as there were colonies under sealed covers where no moldy combs showed up.

Comparing colonies in brood-chamber only with those wintered in two stories, I see very little difference, tho the latter average a trifle ahead in brood-rearing. Last month I mentioned a strong colony that starved in February. That one was wintered in the brood-chamber only, which was contracted to eight combs and had the sides packed.

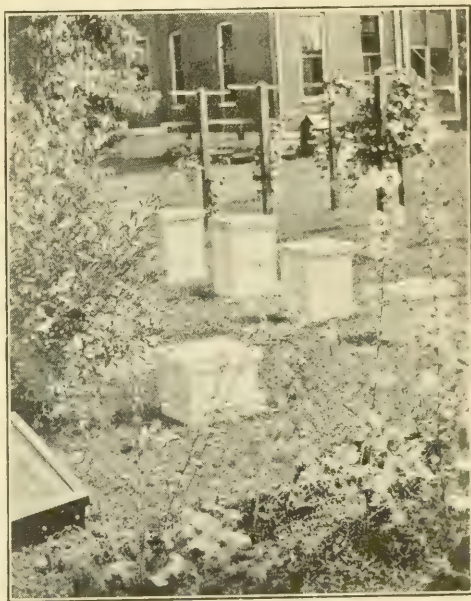
Mr. L. E. Webb, of Morganton, N. C., maintains that the standard hive, even 10-frame, does not make a brood-chamber large enough for wintering without protection in this part of the country. Moreover, he would rather risk a colony in a large unpacked hive than in a single standard brood-chamber in any amount of packing. He wintered every one of his colonies this past hard winter, all in Jumbo hives and story-and-a-half standards. His recent letter is so interesting I am tempted to quote extracts.

"Didn't lose a single colony, didn't have to feed any in spring and haven't a weak colony; having looked thru all, find I will have all ready to swarm before April is out . . . Within a few blocks a number of good Italian colonies starved in standard hives. I didn't pack any, except to place an inch of newspaper between the metal and inner covers, leaving sealed covers on, entrance $\frac{3}{8}$ by 2 inches, and during the zero weather piled the loose dry snow around the hives until it showed signs of thawing. . . I am pleased to the extent of being "Dee-lighted" with my wintering arrangements.

After such a winter as we have had, am satisfied my time is worth more elsewhere than in packing bees (and there's the expense of packing), so I am going to run my yard unpacked, with sealed covers and small entrances, and large brood-chambers thru-out the year. It is such a satisfaction to be free of the worry of feeding, and know they are safe from starvation regardless of the weather; but still greater is the satisfaction of such immense colonies."

One thing is sure—for myself, I shall never again use loose packing. It's too mussy. Being a mere side-liner, I can easily get enough sacks to stuff the packing in. Don't most side-liners buy chicken feed? There are the sacks, and it saves a lot of muss at both packing and unpacking times. Moreover, one can thus look into the hives before ready to unpack, if desired, and replace the packing easily.

* * *



Hives on green grass near fruit trees and young grape vines. "A lovely spot where the very work is rest. Here you will find healing for your soul."

* * *

POLLENIZATION

Like Spanish galleons in from the seas
With onyx and gold from rich Peru,
Heavy with treasure, and singing, my bees
Float in from the blue.

Powdery plunder of green and gold,
Gay little gems of purple and red—
The bees have not begged them nor fought
them nor sold—
They steal them instead!

Laden with delicate dust from a flower
To the heart of another a pillager slips—
And a wonder is done in the plundering
hour
Of these my ships!



FROM NORTH, EAST, WEST AND SOUTH



In Northern California—Copious rains visited this section during March and the weather on the whole was not favorable for bee activity. There were comparatively few bee days during almond bloom. Nevertheless both beekeeper and almond grower have been benefited considerably. On the other hand, conditions in the orange groves are exceptionally favorable. The trees are now (Apr. 5) in bloom and many beekeepers with colonies in fair condition are taking advantage of this excellent source of nectar. Filaree and mustard are yielding, but they have not the rank growth of normal years. April showers will prolong their blooming periods and beekeepers may yet secure considerable increase. The condition of the bees generally is backward. Very few colonies are strong enough to swarm and many are still weak owing to disease and the mild winter which has resulted in an unusually high death rate among the old bees. Some Fresno County beekeepers report 20 per cent of their colonies queenless this spring. This trouble in a less degree is prevalent elsewhere.

The Monterey Beekeepers' Club held their second meeting at Salinas on March 16. The principal topic of discussion was that of organizing a honey producers' co-operative exchange, as outlined previously in Gleanings. The consensus of opinion was heartily in favor of such action and it was held that at least 6,000 colonies without much effort could be subscribed. A local promotion committee of prominent beemen was named in order to carry on the campaign work. The officers of the club are: M. G. Lee of Pacific Grove, president; Geo. Sill of Watsonville, vice-president; and H. J. Hemriken of Salinas, secretary-treasurer. Crop prospects in Monterey are good, with the black sage in bloom at the time of the meeting. A. Norton of Watsonville, the inspector of the county, reported the results of a unique and successful experiment, namely, the sowing of a hillside with the seed of white sage. This honey plant, which is not indigenous to the locality, according to Mr. Norton, made a thrifty growth and yielded a surplus at a time when there always existed a dearth. Mr. Norton urged beekeepers to sow not only white sage but white sweet clover seed as well. The two types of brood diseases in the county are not only prevalent, but are also seriously interfering with increase and honey production.

The series of meetings held in the San Joaquin and Sacramento valleys at Bakersfield, Visalia, Hanford, Fresno, Modesto, and Sacramento, during the first week in April, were decidedly helpful and instructive. The outstanding features at these meetings were as follows: The desire for organization, the general prevalence of disease, and the lack

of an efficient state law relative to bee diseases. Pertaining to organization work the results were highly satisfactory. Many thousand colonies were signed up and the interest in the subject was very keen. It is expected that a large part of the beekeepers in our valleys will become members of exchanges in record time. The Central Valley Honey Producers Co-operative Exchange has already applied for articles of incorporation, and it will not be long before this exchange is in operation.

The disease situation is serious, and it may be stated that the production of honey will be curtailed considerably in northern California. In many of the sections where meetings were held Geo. S. Demuth, of the Bureau of Entomology at Washington, found that both American and European foul brood not only existed in the same apiary and colony but also the same comb. In not a few cases it was extremely difficult to diagnose samples, as in some instances a colony would have considerable European and a few cells of American foul brood. In one case in particular, a short honey flow resulted in healthy unsealed brood, a considerable amount of sealed European with a few cells of unmistakable American. In the same apiary, the next few colonies examined were infected mildly by European, only to be followed by another colony showing a few cells infected with American. Such conditions are not rare and are becoming increasingly common. Your correspondent in several of his apiaries has a sprinkling of American scattered thruout a large part of colonies infected by European. Is it any wonder that so many beekeepers become confused in their diagnosis? This condition exists today thruout our entire section. Not only this spring, but in some years past, many colonies with traces of American, but covered up and apparently lost sight of by the more discernible symptoms of European, have been treated for European and the destruction of combs was not practiced. It must be seen that American is spreading widely and undetected. So we are grateful to our Agricultural Department at Washington for their help in impressing upon us the importance of careful diagnosis. Colonies predominately affected by European, yet containing some American, should unquestionably be treated for American. Let every beekeeper make a thoro study of the symptoms of the two diseases, and, when in doubt as to diagnosis, treat the trouble as if it were American foul brood. No reports of sacbrood have been received this spring. Many of our counties have secured new ordinances this spring as a protection against infected material thru migratory beekeeping. There is increasing dissatisfaction over our antiquated state foul brood law, and one of the first things that our California Honey Pro-



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ducers Co-operative Exchange hopes to accomplish is the drafting of a new law, and, by means of the Exchange's united representation of the beekeepers of the state, to secure its passage.

M. C. Richter.

Modesto, Calif.

* * *

In Southern California— Perhaps never in all the years since bees were first brought to southern California has there been a season like the present. During one whole year, or until Feb. 17, scarcely enough rain fell to lay the dust. From Feb. 17 to date (Apr. 3) from 8 to 16 inches have fallen over the honey-producing sections of the State. Even tho the ground is getting dry and rain is again needed, crops of all kinds promise well, and honey is no exception. Even the orange, that is always irrigated, will yield much better when thoroly wet by nature's rainfall. Sages and wild buckwheat are looking better every day. Some difference of opinion exists as to the probability of the black sage in this section yielding a full crop owing to the lateness of the rainfall. Usually this plant starts growing in January and during some of our good years, I have seen six inches of new growth in February. At present the new growth measures only three or four inches. A great deal will depend upon the weather during April, May, and June as these are our principal honey-producing months. With warm, balmy weather and not too hot, we may expect great growth from all wild vegetation, and growth means blossoms, and blossoms mean honey.

The series of meetings held in different parts of southern California, with Federal and State bee-experts present, have been of great benefit to beekeepers. I do not think any of us could listen to the splendid addresses of such men as Demuth, Atwater, Coleman, Weinstock or Massey and not get many good ideas. Much interest in the California Honey Producers' Co-operative Exchange was manifested, but where there are strong beekeepers' clubs, working satisfactorily, the members are inclined to think that they are not much in need of this organization and are slower in taking up the plan. Consequently, educational work along co-operative lines is quite necessary to properly instruct beekeepers in the advantages of state-wide organizations.

To get the real practical side, some of the beekeepers of Riverside County spent a day with the bee-experts visiting apiaries. Here is where the heart-to-heart talks seem to be at their best. Nor do we get all of the good ideas from the experts. In visiting one man's apiary, we found neatness personified. More than 300 10-frame hives were located on a piece of ground just 100 feet square and did not seem crowded. The hives have a $\frac{7}{8}$ -inch entrance, when clear, and an en-

trance-closer that is ahead of anything I ever saw or heard of. A change of position gave an entrance of $\frac{1}{4}$ by 5, or $\frac{3}{8}$ by 12, or full size, or closed the entrance entirely.

Bees in the orange districts in most cases are in good condition. The honey flow coming at least a month later than usual will be of great benefit to many beekeepers. Colonies that were weak and light in stores have had time to build up and should make a good surplus. The oranges are just about ready to blossom and in a week or 10 days we can look for the honey to begin to come in.

Buyers have been around since Mar. 15 ready to contract for our 1918 crop. How to know what is our just due as to price is our great question. Coming, as our orange honey does, almost two months earlier than most other kinds, it is hard to set a price.

L. L. Andrews.

* * *

In Idaho— Additional reports continue to indicate that winter losses in southern Idaho will be extremely light. Several honey producers with 150 to 350 colonies report losses of less than 5 per cent. Another states he lost only one colony out of about 500, but this is unusual and credit should be given this man for his thoro winter preparation and attention to detail. It is probable that the average loss will range from 5 to 10 per cent, this not taking into consideration spring dwindling.

A number of commercial producers state that in their districts ranchers are plowing up alfalfa and seeding this acreage to wheat. These men are attracted by the high price of wheat, and, no doubt, the difficulty experienced in marketing alfalfa hay in certain parts of this State last fall and winter has some bearing in the matter. Several producers are now seeking new range for bees at present located near the plowed acreage.

The above comment on range brings to mind the fact that repeated inquiry has been made in this immediate territory the past few years by Eastern beekeepers searching for new locations. Letters of information have been forwarded to inquirers saying this range is now overstocked with bees and no open range is available; further, that a change of location might be made by purchasing an outfit already located here. The Boise Valley is badly congested at the present time. Beekeepers of towns located in that valley are continually working over into range of neighboring towns in all directions. The Payette Valley is also heavily overstocked, with apiarists of various towns working into neighboring range—not only in the valley but in other near-by territory. Some inclination is shown by the larger apiarists to ignore the smaller beekeeper, and instances are known where out-yards



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have been established within a very short distance of small yards on the home grounds of owners.

We have had cold weather and high winds for over a week, the latter being especially disliked by apiarists. However, our bees are coming along in good shape, and conditions up to this time have not been particularly adverse.

A few honey producers in this vicinity are inclined to ignore our State law governing the inspection of bees before moving. One or two have barely escaped arrest for moving out-yards without a permit from local inspectors, and our State Horticultural Inspector, who is also ex-officio State Bee Inspector, feels that beekeepers should cooperate more fully with him. An effort will be made during the next session of our State Legislature to provide heavier penalties for violation of our bee laws.

Demand for both comb and extracted honey for fall delivery is increasing. Buyers both east and west are trying to place orders subject to approval of price later in the season, but up to this time no record is had of contracts being made. The usual influx of Coast buyers looking for cheap honey is anticipated later. P. S. Farrell.

Caldwell, Ida.,

In Iowa—The beemen are quite enthusiastic over the prospects for a good honey crop this season. The beautiful sunshine of the past few weeks would produce a smile of anticipation on the countenance of the sourest Iowa beekeeper. This State has been blessed with one of the mildest and most agreeable of March months. While it was warm enough almost every day for bees to fly, the nights were quite cold. Vegetation did not advance fast enough to be in danger of being harmed by a freeze at any time. April, so far, has started off rather cold, the temperature already ranging as low as 20° F. We are short on moisture, so far, this spring. With no fall rains and the ground very dry, it may yet prove to be a menace. There have been two light rain-falls the past two weeks. This section needs copious rains.

Many bees are still in the cellars. There has been nothing of consequence in Iowa that bees could use; and, unless the bees are suffering for the need of a flight, they are much better off in the cellar.

With few exceptions, section honey sold in Iowa at present, is imported from the more favored states. In Marshall county, the home of the writer, honey production was a failure last year. Section honey retails in Marshalltown at 25c to 30c per section—when it is to be had; and then some of it presents a very unmarketable appearance. Hamlin B. Miller.

In Ontario—Since sending in report for

April Gleanings, many have written me regarding winter losses. Summing up these reports, it would seem that the winter loss has been much heavier than it was thought to be a month ago. The heaviest losses seem to have occurred in localities where they generally have a fall flow. Owing to the cool weather here in Ontario during the last half of August and early September, this expected flow failed to materialize. The result was that bees were not as heavy as usual, and, with an exceptionally severe winter, the bees perished largely thru starvation. Many colonies died leaving honey on the side of the hive opposite from where the cluster was formed. The bees consumed all the honey on the combs on which they were clustered and then were unable to move over to combs of

honey on account of severe weather. In other words, they had too much "winter nest." A number have reported a loss of all their bees—these reports coming from amateurs, as a rule. But some older beekeepers have had a terrible loss as well. One friend, who had 150 colonies within 10 miles of one of my apiaries, stated that his bees were heavy enough for winter and needed no sugar feeding—crop was a failure there last year and honey would not have been available even if wanted. As my large apiary, located in the same kind of locality as my friends, most assuredly did need feeding, I was puzzled as to why there should be such a difference. I have just returned from a first visit to this apiary in question, and found perfect wintering, as out of 190 colonies put in cases in the fall, 175 are in fine shape and most of the balance were queenless last fall. On the other hand, I am told that my friend's apiary of 150 colonies has not 50 colonies left alive.

While on this question of winter stores, it would not be fair for me to stop without making a confession as to failure on my own part. As I have already stated more than once, owing to having a lot of buckwheat in sealed combs last fall, I used these full combs in place of feeding sugar syrup as I usually do other falls and as I should have done last fall. Now I felt sure that all had enough as I had combs of honey left over after giving all that I thought necessary. But for some reason my judgment was either wrong or else the consumption of stores was heavier than usual, for at one yard there were half a dozen colonies starved before their condition was noted, and at another apiary half a dozen or more would have starved in a few days if I had not found out their needs early in April. Such a condition is deplorable, for if there is anything we dislike in connection with the bee business, it is to be forced to feed in the spring



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to avoid starvation, and I have to do that very thing this spring.

Sugar is scarce just now, but the wholesaler sent me some "Jamaica crystals." This sugar is put up in large cracks of over 200 pounds and is designated as a "raw" sugar. Can any one tell me as to whether this sugar would do for winter stores or not, as it might be available this fall when granulated would be hard to secure?

Clover is looking well, and, altho we have had freezing nights for the last 10 days, danger from heaving should soon be over. I had thought that owing to very high prices of all kinds of grains clover growing would decrease in favor of grain growing. But clover seed is also very high, and farmers recognize the need of rotation of crops and are not to any great extent, at least, cutting down on the clover crop. Careful inquiry from seedsmen shows that the clover seed sales this spring are on an average with other years, and that is about the best way of gauging a question of this kind.

No change in the honey markets except that honey is still scarcer than it was and most of the dealers have none to offer.

Regarding the heavy losses among many beekeepers, it is unfortunate that Southern breeders are not able to supply the demand for queens and packages. A few that lost all their bees have been unable to get promise of delivery from Southern breeders, and some are trying to buy a colony or two for the purpose of making increase again and caring for the combs they have on hand. Winter losses are always bad enough, but under present conditions are exceptionally regrettable. [But the Southern breeders are to be highly commended for not promising deliveries of which they themselves are uncertain.—Editor.]

Surprising what bees will stand in a very severe climate providing they have lots of good stores in a position available for the bees' needs, no matter how cold it may be. The strongest colony of bees that I have seen this spring is in a basswood log standing in a neighbor's apiary. The tree was cut in February and when the bees were discovered, the log was cut thru just above the combs and a board nailed on to keep out rain. The entrance was about five feet further down the tree and consisted of a hole about four inches in diameter. The log was brought to my friend's place, and, altho he has a lot of strong colonies in regular hives, this colony in the log will be flying when not a bee is stirring in his other colonies. I have had other reports this spring of bees having wintered well in trees, so it can be safely said that cold does not necessarily mean injury to bees, if stores are abundant and of good quality and in the right place.

Markham, Ont.

J. L. Byer.

In Texas—On March 31, Frank C. Pellett left for his home, having completed a seven weeks' tour of the State. This was perhaps the most comprehensive trip ever undertaken by any specialist in apiculture in any State. The trip included almost every important beekeeping section from the extreme southern to the northern border of the State. Mr. Pellett came primarily to observe Texas beekeeping conditions and he found much of interest and some features that were very unique. Taking the attitude of a visitor, Mr. Pellett could readily see many problems in Texas beekeeping that must be solved. In most of the counties that Mr. Pellett visited, the County Beekeepers' Association held a meeting so that most of the beekeepers might avail themselves of the opportunity of meeting with Mr. Pellett. W. E. Jackson of the State Entomologist's office accompanied Mr. Pellett on the entire trip. E. G. LeSturgeon, manager of the Texas Honey Producers' Association, was present during a portion of the trip. Much good will come to the beekeepers of this State as a result of this trip of study by Mr. Pellett.

At the annual meeting of the County Apiary Inspectors the need of an experimental apiary was discussed. In order to get one in operation at the earliest possible date, each inspector agreed to donate one colony of bees to form the nucleus of an apiary for experimental purposes located at College Station. This public-spirited move on the part of the inspectors to advance the beekeeping industry of this State is worthy of much commendation. Texas needs much investigational work in apiculture and it is expected that the present gifts will prove to be a start of much good effort for the industry.

Over the eastern half of the State quite general rains have occurred in the last two weeks, but the western half is still very dry. In some localities of the mesquite area, light showers have occurred and these will help greatly. Much more rain is badly needed over the entire State to insure satisfactory honey yields.

Several of the larger shippers of pound packages of bees have received orders for all they can supply. There are still a few who are well prepared to handle late orders. An effort is being made by the State Entomologist's office to determine who can handle more orders so as to direct purchasers properly. There is an increasing demand for package bees from beekeepers in the North and it is the desire to put buyers at once in touch with those who may have bees for sale.

More interest is being manifested in bees by a greater number of people this year than ever before. It is a well-directed desire to produce as much honey as possible so as to



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release more sugar for our army. And why do we not produce more honey? It can be used in so many ways and is a healthful sweet. There are some beekeepers in the State who feel that beginners should be given every encouragement in their new endeavors. One has even gone so far as to give detailed information on the production of section honey. Such ill-advised information can only do harm to the industry.

In one county it has been estimated that 30 per cent of the bees in trees have died. It seems that nature takes care of what belongs to it wonderfully well. In this same county, the average loss of the beekeepers was higher.

We notice with much interest an advertisement of an enterprising queen-breeder offering for sale "medelian" bred queens. This is a big term full of meaning which will baffle the majority of the beekeepers.

College Station, Tex. F. B. Paddock.

* * *

In Florida—The orange bloom has been somewhat of a disappointment this year. Altho we have all secured fair crops, the flow was of such short duration that only the best of colonies were able to make a good showing in the supers. From all reports available, the crop will be about 45 lbs. per colony. There will be some reports of very much larger yields, the kind of reports that give a false impression of Florida beekeeping. But the object of this department is not to exploit the doings of individual colonies or small apiaries in especially favored locations. There are always some colonies that give results out of all proportion to the rest, but these exceptions should not be taken account of when forming an average. I have one colony of Carni-Italians that have given me over 200 lbs., and several others that have given over 100 lbs., but such colonies can only be looked upon as freaks.

Altho our crop is not so good as in 1914, the advanced prices will more than make up for the shortage. We are offered 15 cents per lb., f. o. b. shipping point, and, while this is a good price, it is doubtful if we ought to accept it. Cuba is offered the same price for campanilla honey, the low-grade West Indian honeys bring the same, and I have one report of a crop of cabbage palmetto that sold for 16 cents. Why should Florida beekeepers sell their best honey at the price of inferior grades? It is seldom that we make a crop from the orange, and to sell at the price of palmetto and fall honeys is not reasonable.

The practice of selling to the consumer and small retailer at the same price we are offered by the wholesale houses should be discontinued. When we are offered \$1.80 a gallon by, let us say, the A. I. Root Co., is

it fair that we should sell locally at \$2.00 per gallon when "Airline" honey is being sold in our retail groceries at a very much higher rate? It is the wholesale buyer on whom we depend for the disposal of our crops, and we cannot expect the best prices when we do not give a square deal ourselves.

Prospects of a good crop from gallberry and saw palmetto are excellent, and this bloom is coming nearly a month earlier than usual in this section. Already the gallberry is in bloom (Apr. 4), and a few sprays of palmetto are flowered out. There has been comparatively little swarming where the bees had plenty of drawn combs, and colonies are in fine shape to care for the coming palmetto bloom, which will undoubtedly be the heaviest we have had for years.

Many new apiaries will be started in Florida this year, if all those who are trying to buy bees succeed. Many will do well, but a great many who are locating near the orange groves will fail because they have nothing with which to back up their orange flow. If those who start with bees would look first to their summer pasturage, there would be fewer failures in Florida beekeeping.



A Florida Apiary.

The picture of the apiary printed above doesn't show anything in particular, but it does show in general what a Florida apiary looks like and Florida apiaries are doing pretty well this season, thank you.

Apopka, Fla.

Harry Hewitt.

HEADS OF GRAIN FROM DIFFERENT FIELDS

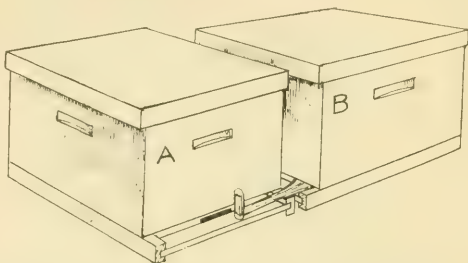
Better Treatment for American Foul Brood.

Recently Gleanings has received several requests for a plan of treating American foul brood which would be less expensive, less exhausting on the bees and more certain in its results than the usual shaking plan. We here give a simple method by making use of a bee-escape which we believe will answer the requirements, but at the same time call attention to the fact that the recurrence of American foul brood is not necessarily a reflection upon the shaking method as it may be due to some neighboring source of infection. However, it is true that in shaking there is the possibility that some honey might be shaken out or that some diseased bees might enter neighboring hives. Therefore, we believe the following a better plan:

In order that the bees may become accustomed to the changed appearance of their surroundings, a few days before applying the treatment, it is well to place an empty hive with its entrance parallel to the left side of the hive containing the diseased bees and extending a few inches in front of the other entrance. A few days later, the queen should be found, caged, and placed in the entrance. After the bees have recovered from this disturbance, and during the time of day when they are still flying strongly, the caged queen is removed and a bee-escape which is fastened to the end of a tin tube is inserted at the left end of the entrance, the rest of the entrance being securely stopped up so there is no room for the escape of any bees except thru the bee-escape. This hive is now placed in the position formerly occupied by the empty hive, the latter being placed on the old stand and filled with frames containing

turning in great numbers to what they believe to be their old home.

The tin tube holding the bee-escape extends out in front of the new entrance so that bees leaving the old hive leave from the same relative position as before, and therefore do not realize that the hives have changed places, and consequently will not attempt to return to the old hive but will unhesitatingly enter the hive with the queen. After a large number of bees have returned



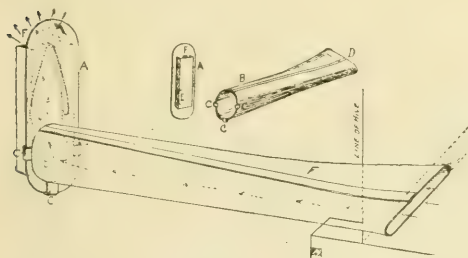
Arrangement after the exchange of hives has been made. (A) is new hive on old stand and contains frames of foundation and the caged queen which is soon released. (B) is the diseased colony, the bees of which leave thru the tube and bee-escape. On returning they enter the hive (A) not knowing the hives have changed positions.

the queen should be liberated. Altho there is no brood or larvæ present, it is very seldom that the colony will swarm out. If this is feared, however, a queen-excluder may be placed under the hive. Within two or three days it sometimes happens that dead bees clog the escape, in which case the cage should be detached from its groove in the end of the tube, and the bees removed.

Just before dark, two or three weeks later, when most of the brood has hatched, the few straggling bees that may be left in the old hive may be sulphured thru a small opening at the entrance, care being taken not to allow the escape of a single bee. The combs may then be rendered, the frames and the few dead bees burned, and the inside of the hive, the entrance, and the alighting-board, scorched by means of gasoline and straw, charring to a light brown.

In very hot climates it may be advisable to provide special ventilation for the old hive in order to prevent the combs from melting down. But ordinarily this is not necessary, for it should be remembered that nearly all of the bees are in the new hive and a mere handful are left taking care of the brood in the old one.

This method is a very safe one, since there is no disturbance at the time of the treatment and no chance for spreading disease by means of the honey or bees. The bees entering the new hive are not bees that have been smoked, and are therefore not gorged with diseased honey, but are field bees bringing in uncontaminated stores, straight from



The upper figure represents the tin tube (B) with three lugs (C) into which the bee-escape (A) is inserted. The end (D) of the tube is somewhat flattened to make possible its insertion in the entrance. The lower figure shows the tube and escape connected and attached to the hive. The bees in leaving the hive follow the line of arrows thru the tube and thru round opening (E) of the escape, then up the length of the escape and finally leave thru the opening between the two springs at (F).

full sheets of foundation. The caged queen is also left in this new hive, where she is soon joined by the field bees who are re-

HEADS OF GRAIN FROM DIFFERENT FIELDS

the flowers. At first thought it might seem possible that the young bees from the old hive might carry the disease to the new hive; but apparently they carry no honey with them, for we have yet to learn of their spreading the disease in this way.

Sugar Beets for Producing Bee Feed.

Having recently received quite a number of inquiries concerning the advisability of beekeepers raising beets to obtain syrup for feeding the bees, we referred the matter to the Ohio Agricultural Experiment Station. From the reply by Chas. E. Thorne, we quote the following:

"The information we have respecting the making of syrup from the sugar beet leaves us in doubt as to whether it is practicable to make an acceptable syrup in a small way. It is true that Farmers' Bulletin 823 of the U. S. Department of Agriculture, claims that this may be done, but I doubt whether the author of that Bulletin has had practical experience in the matter. The literature on this subject in our library indicates that the syrup will have an objectionable flavor which cannot be avoided without some chemical treatment.

"Our chemist, Mr. Ames, has had considerable experience in the testing of beets for sugar, in which the juice was extracted and evaporated in a small way, and he has found this disagreeable flavor very persistent. I am quite sure that the method of

boiling down the syrup described in the Bulletin referred to would result in a tarry product, which would be unusable."

It may readily be seen that if the beet syrup contains gums, this would preclude its extensive use as a bee feed. Moreover, we have always felt that the place for the beekeeper to raise sweets is right in his beehives. Let us concentrate our energies where they will bring most paying results.

Defends Comb-Honey Production.

Perhaps you will remember that not long ago the Government was advocating the production of comb honey. In 1909 I changed and have been producing extracted honey ever since.

I don't think you have looked ahead or you would not be quite so emphatic. I happen to be acquainted with all these men, members of the Jefferson and St. Lawrence County (N. Y.) Beekeepers' Association, quoted by Mr. Holtermann in March Gleanings, and I know that if they changed from comb honey to extracted, it would not be very long before they would not have a colony of bees. Do you ask the reason? Because they would take all the honey and not feed the bees. I find it is more work than anything else to see that the colonies run for extracted honey do not starve. As a rule we do not have much of a fall flow; and if they are not fed with combs of honey or sugar syrup, they will starve before January.

Wrong again. At the present price of



Apiary of Geo. B. Howe, Black River, N. Y.

HEADS OF GRAIN

DIFFERENT FIELDS

honey there is more dollars and cents in the production of extracted honey. What I wish to emphasize is this: That the expert will feed and care for his bees; but the let-

patriotic as to take the honey away from the bees and allow them to starve, we refuse to believe. If there should chance to be a few such slackers, we and Government officials feel convinced that such a loss of honey will be small in comparison with the increased crop which the extracted-honey producers will obtain as a result of less swarming and less work on the part of bees and beekeepers. It is just because the Government has looked ahead—that is why it is urging this change. As for the people who “will have their sugar even if a few do starve over in Europe,” we certainly shall not cater to them in the smallest degree and we believe we may trust our Government to deal with them quite summarily and effectively when the time comes. However, we feel that Mr. Howe had on his dark glasses the day he wrote that article. Really the people of our country are not as bad as that. Since the war began, the old careless selfishness has been gradually disappearing. Now the people are waking up, each one alert and eager to do his bit in production, work, money, or any other way that he possibly can. As soon as the beekeepers understand that their bees must be fed, and as soon as the public is shown that extracted rather than comb honey should be eaten, just so soon will Mr. Howe’s objections be repudiated.—Editor.]



Product from one colony (numbered 25), secured by Geo. B. Howe, Black River, N. Y.

alone beekeeper will not. Thus we shall have a mighty sight more bees, if we let this class run for comb honey.

Nor is that all. There is a class that will not eat extracted honey. “Let them go without,” I hear you say. If they do not get the comb honey they will have their sugar, even if a few do starve over in Europe. What do they care? I should like to see this class starve a little. But they won’t. They are the last to suffer.

There are locations where they can produce as much comb honey as extracted, and all you and I might say would not prove the contrary. I have retailed tons of honey, as you know, so I am not guessing in regard to that class that will not eat extracted honey.

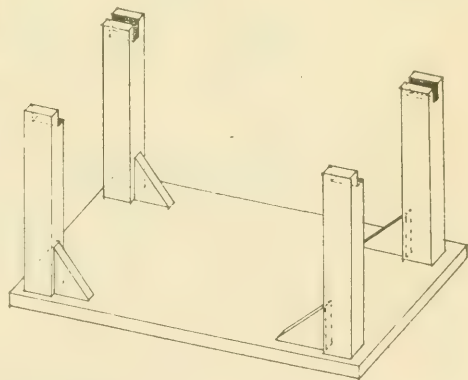
Geo. B. Howe.

Black River, N. Y.

[That a large per cent of the beekeepers of New York or any other State will be so un-

Device for Wiring Brood-Frames.

I had so much trouble in holding the brood-frames steady while wiring them that I thought I needed a frame to hold them plumb. Happening to see the end of a Florida-orange box which was mortised, I said, “There are the pieces already



made for me.” So I took an old hive-top, mortised four holes in it, drove in the box ends, and cut four braces to support them. For the top-bar I cut off the inside lip, stuck in the frame, and I tell you it is fine and it cost nothing. I nail the top onto the top of my workbench.

Ashland, Va.

Parkin Scott.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Two Young Queens Winter Together.

Recently I ran across something that I think is new. I found two queens that had wintered over in the same hive. The circumstances are as follows: Last fall I was re-queening a certain yard by removing the old queens and introducing cells. I had more cells than there were colonies to be re-queened, and put a plurality of cells in certain colonies. In this case it appears that two cells hatched and both queens were accepted; that they mated and layed side by side last fall and finally wintered over together. Is it something new, or is it ordinary occurrence?

The only similar occurrence that ever came under my own observation happened in the summer time. I had two young queens hatch in the same hive, and they layed side by side for a month or more. As soon as I discovered that there were two queens, I removed one of them. Of course, I have no means of knowing whether they would have shared the hive peaceably all winter or not. But, in this last case, I am sure that both queens occupied the same hive all winter. Now, please don't let anybody call me a liar. I have a witness to the fact that they were discovered on the same comb.

Roxton, Texas.

H. D. Murry.

[In commenting on Mr. Murry's observation, our queen-rearer, Mr. Pritchard, says:

"A year ago last fall I had what I think were two young queens in a hive when I packed it away for winter, but one was gone when spring came. I have had two young queens living peaceably together in the nucleus-boxes several times. But all kinds of strange things happen in these little swarms. I think Mr. Murry's report is rather unusual."]

Paraffine for Fastening Foundation.

Referring to the item on page 238, April Gleanings, "Can I use paraffine for fastening foundation in frames?" I would say yes. I cannot afford to put foundation into the wooden groove as generally done; besides, it narrows the foundation in the frame. I use a glass tube with a rubber bulb; have a board—or, rather, six boards—on a layer upon which the sheet of foundation is laid, and the frame slipped over. I used 100 pounds of paraffine mixed with rosin, melted. Very little is required. The rosin added does the trick. Not a sheet was melted down.

R. F. Holtermann.

Brantford, Ont., Canada.

[This seems to be a valuable suggestion. The rosin would, of course, raise the melting-point. We know many beekeepers who use wax, mixing it with about one-third part rosin to cut down the cost, and also to attach the foundation more securely.—Editor.]



THE BACK LOT BUZZER.

Ma says Miss Annie Applefing wants to do all she can in these days of conservation but she just can't find out what to use for a bee-bread substitute.

REPORTS coming to Gleanings during the last month do not lead us to change materially our estimate of winter losses and the condi-

tions of bees prevailing thruout the country, as told in the April number of this journal. The northeastern part of the country was generally hard hit by winter losses. The Southern States, excepting Kentucky and Tennessee, seem to have experienced normal wintering conditions, with the bees in North Carolina, Georgia, and Florida having done exceptionally well. Varying reports, good and bad, come from the middle North and the northern Mississippi Valley. The good reports coming from the Rocky Mountain and Pacific Coast regions early in the season are not contradicted by later word from those sections.

The National Food Administration, thru the deputy state administrators thruout the Nation, has made it easy for beekeepers to secure sugar for their bees—wherever any sugar at all can be secured. Some States still report a serious shortage of sugar, but generally thruout the country the sugar conditions have much improved during the last month.

As before noted in this department, beekeeping is coming on more and more in Montana. The fourth annual meeting of the beekeepers' association of that State was held at Billings on March 7, when a number of very enthusiastic beekeepers were in attendance. The new officers of this association are: President, B. F. Smith, Jr., of Fromberg; secretary-treasurer, Frank E. Clift of Huntley. An executive committee, consisting of the officers of the association and several members, was instructed to formulate and issue from time to time during the season recommendations to the members of the Association as to the prices at which their honey crop should be sold. A very interesting program was carried out at the meeting.

Nebraska is another State that is taking a decidedly larger interest in beekeeping, and the county agents there are generally giving every encouragement to the work. H. C. Cook of Omaha, an enthusiastic and successful beekeeper, is giving much of his time and experience to the promotion of good beekeeping in his state. The Nebraska Beekeepers' Association is also lending aid to better beekeeping and a more general interest in the craft thruout the State.

An important gathering of the beekeepers of Massachusetts was held March 23 at Worcester where there was a wide and representative attendance, among them the presidents of each of the five local beekeepers' societies of the State together with sec-

JUST NEWS

Editors

retaries. Absolute unity, enthusiasm, and earnestness prevailed, having in view the formation of a "Federated Massachusetts Beekeepers' Association,"

for which bylaws were formulated and adopted. It was voted to incorporate this association. O. N. Smith of Florence is president, and Miss Dorothy Quincy Wright of Chelmsford is the secretary-treasurer of the new organization. This movement looks to a bigger and better day for the beekeepers of the old Bay State.

Texas now claims to have the most comprehensive foul-brood eradication system in the United States, and the factor of co-operative county organizations plays a large role in it. F. B. Paddock, State Entomologist of Texas, speaking of the efficiency of the work done there, says: "When we discover foul brood we try our best to get the beekeepers themselves sufficiently interested to form county associations. Each inspector is chosen jointly by the county association and this office. He is not, therefore, a foreign element in the county. He is nominated by the beekeepers and is as much responsible to them as to us. It is a frequent occurrence for the president of an association to get behind an inspector and see that he does things properly. On the other hand, the association is an ever-present help to the inspector in enforcing the regulations. If a beekeeper is ordered to clean up and fails to do so, the association, by its influence, sees that directions are carried out."

The second annual beekeeping short course of Iowa State College will be held at Ames, May 13 to 18. The course will be made very practical, several successful commercial apiarists assisting in instruction. Programs can be obtained from F. Eric Millen, Ames. No fees will be charged.

The Panhandle Beekeepers' Association held its annual winter meet at the Market House auditorium, Wheeling, W. Va., on March 27. About 50 enthusiastic beekeepers were in attendance, and an excellent program was carried out. The officers are one of the liveliest lot of beekeepers anywhere, and they purpose to build up a large membership. They are in a fair way to do it. Charles A. Reese of the Department of Agriculture, Charleston, is one of the big helpers in advancing beekeeping in the Panhandle region.

The beekeepers of Western Pennsylvania will meet at the home of F. J. Lillie, 336 E. Pleasant St., Corry, Pa., on May 15. Geo. Rea, State Bee Inspector of Pennsylvania, will be present to demonstrate.

Francis Jager, former president of the National Beekeepers' Association, left America on Apr. 16 in charge of another Red Cross expedition to Servia.*

"OUR honey season is just about closing here for the winter and has been very good around these parts. I have taken about 60 pounds average per hive."—Wm. Barnes, Garrah Willah, N. S. W., Australia, Mar. 4.

"I harvested and marketed a good eucalyptus crop of honey during January."—S. J. Paul, Los Angeles County, Calif., Mar. 30.

"The honey outlook in the Ozarks of Missouri is A No. 1."—Frank McMurray, Lawrence County, Mo., Mar. 30.

"I had 37 colonies packed on the summer stands last fall, and all alive now."—D. A. Harnon, Crawford County, Pa., Mar. 18.

"The honey harvest was quite fair and the prices just doubled. The demand was enormous."—Anna Sommer, Ronne Bornholm, Denmark, Jan. 14.

"I had a fine swarm of bees on Mar. 14. Is this early? I put them to work on some starters O. K."—W. W. Bayles, Washington County, La., Mar. 20.

"D. D. Turner, Ancon, Canal Zone, is the first and original beekeeper on the Isthmus Canal to my knowledge."—A. H. Clagg, Gatun, Canal Zone, Panama, Mar. 6.

"I have 14 colonies. One died this winter. I packed them. My neighbor lost 9 out of 12 colonies—no packing."—Collis R. Bower, Columbia County, Pa., Apr. 2.

"I am trying to get my three uncles into the bee business. I am 15 years old and have been in the bee business myself for two years now."—Bert C. Elkin, Indiana County, Pa., Mar. 15.

"We had two very dry seasons and have lost most of our bees. People in this part of the country have had very poor crops the past two years."—G. G. Miller, Nueces County, Texas, Mar. 18.

"I am a beginner who has hopes of better things. I have purchased A. M. Applegate's goat and perhaps shall have milk and honey—if wheatless and meatless."—Mrs. M. S. Oliphant, Sussex County, Del.

"On March 19 bees gathered their first natural pollen, and today (March 20) 24 bees loaded with pollen entered one hive in one minute's time."—L. A. Ressler, Elkhart County, Ind., Mar. 20.

"My bees wintered perfectly in my closed-entrance cases, while I lost 66 per cent of those wintered the old way. I kept the entrances to the packed cases closed except when the bees can fly. It is 100 per cent perfection with me."—Clyde Cordrey, Logan County, Ohio, Mar. 18.

BEES, MEN AND THINGS

(You may find it here)

"Not many bees alive in this section now. I don't think pound packages of bees from the South turn out to be much. They are on the road too long and are

all fretted out."—F. Alderman, Livingston County, Mich., Mar. 18.

"I enjoy having a few colonies in the back yard where I can see somebody work besides father, and also have a supply of honey to run to, while the food profiteers are having things about their own way."—John H. Ream, Dakota County, Nebr., Mar. 7.

"We are giving a correspondence course in beekeeping here in Oklahoma. At present we have about 500 enrolled and expect a maximum enrollment of something like 1,000."—C. E. Sanborn, Entomologist, Oklahoma Agricultural and Mechanical College.

"As the extremely cold winter killed all the peaches, which is my main crop, I'll have little to do but work with the bees the coming summer, and expect to make the 30 colonies I now have equal to about 60 guns against the Kaiser."—S. H. Burton, Daviess County, Mar. 28.

"Our winter was rather short. I ditched some on Dec. 2, and harrowed today. My bees also flew Mar. 2. We have not had more than six inches of snow at any time this winter. I keep my bees in packed hives out of doors."—H. O. Barlow, Sargent County, N. D., Mar. 22.

"Up to Feb. 1, 1918, we had the driest year since 1861. So I sold all my bees. But in March we had as much rain as in the flood year of 1884, and now we have had about our natural rainfall of 20 inches and expect a fair crop here this year yet."—J. G. Harman, San Diego County, Calif., Mar. 1.

"Don't send Gleanings next year unless you can send a cure for the disappearing disease as I have lost all my bees thru it. It was lamentable looking at them and unable to do anything for them. So I have no bees. Hoping you will have a cure by next year."—Thomas Finegan, Drogheda, Ireland, Mar. 13.

"The drones of the best colonies should never be trapped as they will improve any virgin queen that may fly. It is a common belief that the presence of drones causes swarming, but it never has been proved to my knowledge, and seems only an inference from the fact that only strong vigorous colonies rear many drones and only they swarm."—L. W. J. Deuss, Blantyre, Nyasaland, So. Africa.

"Weather here ideal. Fishing hilarious. Meatless days are no barriers to us. With a large king fish fried or baked and a liberal

supply of good johnnycake and honey to go with it, kings and emperors should envy. One man here alone yesterday caught 525 pounds of fish." M. L. Brewer, Manatee County, Fla., Mar. 11.

"This man, ———, set the price locally for all our comb honey last year because he did not take any bee journal and did not know what honey was worth. He sold at five cents less than he might have obtained, as well as the rest of us, had he known conditions."—Eugene Secor, Winnebago County, Iowa, Mar. 25.

"I am not at all surprised that you so easily made a contract for all the honey you could supply. I never have seen honey so pure gold a hue, nor so rich, and the perfume from which scents a room so that it is as full of sweet odors as a flower garden."—From a letter of Marian Moffet, 144 E. 17th St., New York City, to J. Jensen of Guatemala, Mexico.

"The bees have gathered more honey in Florida this year from orange bloom than I have even known them to do before. I understand that the bees get a lot of honey, too, from a plant that the various bee men term wicker, greasewood, wild huckleberry, myrtle, and some other names for the same thing. Wm. A. Selser, transient at New Smyrna, Fla., Mar. 18.

"The outlook for beekeeping this season in Nebraska is just grand, and judging from what Mr. Tubbs of Beatrice said, the bees are starting off early to do their part in putting Nebraska to the front. He says he hived a swarm for a neighbor on Feb. 24. I lost only one swarm this last winter and kept them outdoors."—O. E. Timm, Douglas County, Neb., March 23.

"I am on the retired list in our West Wisconsin Conference, being in my 80th year. One son has been in the army ten years and two other younger boys are in the draft. So my work is to feed the stoves, bees, and poultry. My bees are all in the cellar, and I buy my sugar, a dollar's worth at a time, for the feeding I have to do."—J. N. Mills, Barron County, Wis., Mar. 4.

"I have just been reading in March Gleanings what J. H. B. Hall says as to 'all bees in this country are in boxes and logs—bees ain't no good here.' I beg to say that I have been living in Shelby County, Ala., for more than a year and while I must admit that up-to-date beekeepers are scarce, yet I know of eight or ten beekeepers within as many miles who have more or less bees in movable-frame hives and are producing section honey."—H. A. Lynd, Shelby County, Ala., Mar. 11.

"For a watering-place for bees, get a keg or small barrel, bore a number of one-inch holes with an auger near the bottom; put a corn-cob in each hole but don't fit the cob too tight; put a tight cover on the barrel,

and it is ready for use. The water soaks thru the cobs and in a short time they become thoroly saturated. Fresh cobs should be put in every month or six weeks. The water does not require changing very often and none is wasted. It is impossible for any bees to get drowned at this watering-place."—M. L. Dodson, Decatur County, Kans., Mar. 20.

"While in Detroit some weeks ago, I found several restaurants serving honey instead of sugar in tea and coffee. Altho a great many beekeepers are known to use honey for that and other table purposes, this is the first instance I have known where honey was used in this way in restaurants. Proprietors of these establishments stated that customers seemed to like honey in beverages, and some would ask for it specially after it was put into use."—P. S. Farrel, Canyon County, Idaho.

"I have nine bee yards fully equipped, 25 to 300 colonies in each. Six yards are along fine stone road, and two more can be reached most of the year by auto or motor cycle. I move two or three of my yards in the spring to the coast, and in the fall back to the mountains. My central location is in the largest and most progressive American colony. We have a school, church, large American hotel, town waterworks, ladies' club and several associations. It is very healthy here, especially good for asthma."—M. C. Engle, Herradura, Cuba, Mar. 27.

"Sweet clover will be a factor in honey production in the future in the great Gallatin Valley as it is getting a stronghold along the irrigating ditches and along the highways. The main sources are alfalfa, alsike clover, white clover, and certain wild mints along the streams. There are a great many fine swarms of Italian bees in the hollow cottonwoods along the river. I found a piece of wild honeycomb among some rocks in a stream away up in the mountains last summer, 20 miles from nowhere."—C. A. Kinsey, Gallatin County, Mont., Apr. 4.

"I have harvested from two colonies in a season 1,000 pounds of honey. The box-tree is the best yielder here. This season in Australia is an exceptionally good one for honey. Thousands of tons are being produced. I and my brother have 40 colonies and up to the present have secured 5,500 pounds and expect 3,000 pounds more. A good average, don't you think? In regard to prices, at present it is worth 9 cents for extra prime. I am more than pleased to see American buyers here buying our honey and in fairly big consignments. Our seasons here are very irregular. One in four will be grand, two will be good, and one will be almost a failure. Beekeepers are becoming more modern in their methods here and working their apiaries on a good American system. So beekeeping is becoming a big industry in Australia."—Percy Sweetman, Dennis Island, George's Plains, N. S. W., Australia, Feb. 15.

QUESTIONS.—
 (1) Does about one quart of bees weigh a pound or more? (2) Does one get more bees in a one-pound package than in a one-frame nucleus? (3) Beginning in June, if one should put one pound of bees in an old-fashioned box hive and have a section fastened in the top, would the bees be apt to stay and begin working and do fairly well without a queen?

New York.

Leeman Ferris.

Answers.—(1) One quart of bees contains about 3,200 bees, and one pound contains 5,000. (2) A one-pound package of bees contains more bees than a one-frame nucleus. (3) No, you could obtain no honey whatever by this method, for the nucleus would constantly dwindle and finally die outright. They should be given a queen, and by slow stimulative feeding allowed to build up their colony to a suitable size for honey-gathering. In the March issue of *Gleanings* you will notice among the editorials a good description of the method of treating these pound packages on their arrival.

Questions.—(1) When all the Hoffman self-spacing frames in a ten-frame hive are pushed together to one side there remains a space of $\frac{1}{8}$ inch. For what is this space? (2) Should the Hoffman frames in the brood-nest of a ten-frame hive be pushed close together or should they be spread slightly apart to take up the $\frac{1}{8}$ -inch space left on one side?

Missouri,

H. J. Pelikan.

Answers.—(1) After the frames have been used a while, the projections at the sides of the frames become more or less covered with wax and propolis, so that less space will be left. There should be some extra space, however, to facilitate the removal of frames. If there were no space, then, in order to remove a frame, it would be necessary to pry straight up on the top-bar; and, if the frames were stuck down as securely as they often are, this would result in a crack in the comb near the top-bar, and sometimes the top-bar would even break or be pulled away from the end-bar. If there is some extra space, then, instead of prying upward, one may first insert the tool between the ends of the frames, and by prying sidewise loosen each end of each frame from that of its neighbor. Then by an upward lift the frames may be easily removed. In this connection we wish to call attention to the fact that a frame should never be pryed near the middle since at that place there is so much spring to the top-bar that the prying is very apt to pull the top-bar away from the comb. The tool should always be used near the ends of the frames as above stated. (2) A space of $\frac{7}{16}$ inch should be left at each side. If all the space were left at one side of the hive, the bees would build brace-combs—that is, irregular combs connecting the outside comb with the hive wall.

Question.—I have ordered from the South 75 pound packages of bees with queens to be delivered

GLEANED BY ASKING

E. R. Root

early in May. I intend to put them in Jumbo brood-chambers and to feed for comb-drawing and brood-rearing. As I have only two or three drawn combs for each colony, I must, therefore, fill in with

sheets of foundation in wired frames. Now, should I start the bees in extracting supers of standard frames, and then during the honey flow, when the combs are filled with brood, move the queen and one brood below onto Jumbo frames under a queen-excluder, leaving drawn combs above to be filled with honey as soon as the brood hatches, or should I start the queen to rearing brood in the Jumbo frames?

River Falls, Wis.

M. A. Shepard.

Answer.—If you could be perfectly certain that each nucleus would increase sufficiently to build out the foundation in the Jumbo body and brood-chamber as well as store sufficient honey for wintering, and also some in the super, then they might be started in the super, as you suggest. However, if you wish to winter in the Jumbo hives, we believe the best plan would be first of all to get the Jumbo combs properly drawn out so that the approach of winter will not find you with only frames of foundation for wintering. Moreover, if these Jumbo combs are used for breeding during the summer, the extra cocoons added to the cells will make the frames warmer for wintering. The nuclei should not be given the entire hive at first; but by means of division-boards they should be kept crowded onto only as many combs as they will conveniently cover. Then as the nucleus gradually increases in size, more frames may from time to time be added.

Question.—What is the best way to feed bees honey in the comb? C. F. Oliver.

Indiana.

Answer.—The best way to feed honey that is in the comb is to put the comb right in the hive. If it is liquid honey, it should be thinned with about 10 per cent of warm water, and, on account of the danger of transmitting diseases, it would be preferable to boil the honey, if it comes from a source unknown.

Question.—Would it not be better to use full sheets of drone foundation in place of worker foundation in the sections? I find that bees fill out with drone comb when starters of worker foundation are used.

G. A. Sheppard.

Minnesota.

Answer.—It is true that, when given starters, the bees show a decided inclination to build drone comb rather than worker comb; but this would in no way warrant the use of drone foundation in sections; for the worker foundation results in comb of such superior grade that this more than offsets the apparent preference of the bees.

Question.—Please give a good method for preventing swarming.

Kirkville, N. Y.

Maud Hulburt.

Answer.—The queen should be clipped, the colonies examined at least every week to be

certain that no queen-cells are built; and should they appear all capped ones should be torn out and a hive of combs, containing one comb with young larvæ and the queen, should be placed on the old stand and covered with a queen-excluder. Above this should be placed the supers, if any are in use at the time, and, at the very top, the hive of brood. At the end of eight days this upper story may be moved to a new location and the bees allowed to raise a queen if increase is desired. If not, the cells may be torn out and the bees allowed to hatch just where they are, or the brood distributed to other colonies that are in need of it.

Question.—Will a queen leave her hive and go to another and remain there? Last summer I hived a swarm, and two days later saw a fine yellow queen alight and go in. Later I examined them and found her quite different in appearance from the others.

Virginia.

A. A. Campbell.

Answer.—It would be very unusual for a queen to leave her own hive and go into another and remain there. If she did so at all, it would be purely by accident, and, unless the other colony was queenless, this new queen would probably be balled and killed. But if the colony were queenless, her chances of being favorably accepted would be rather good. The fact that the queen you saw was of a more yellow color than the bees proves nothing. Many times a queen is of better color than her own bees.

Question.—In the Townsend bee book I have read that, as soon as the swarm begins to cluster, a new hive should be set on the old stand and the supers from the old hive put on it whether they are partly filled or not. Now, what becomes of the old hive? Should I put a super on it also?

Richmond, Va.

F. E. Ingroff.

Answer.—Since the old colony is in a very weak condition, having lost most of the bees, and since there will not be another laying queen for at least one or two weeks, it is evident that they will be unable to store any surplus honey for some time. Therefore no super should be put on until the colony has built up sufficiently to warrant such a step. If the swarm occurs early in the season, it may be possible to obtain several supers of honey from this old stand, but, if late, not much can be expected from them in the line of surplus.

Question.—In a neighborhood containing hybrid stock, how may one raise pure queens?

R. L. Wilby.

Answer.—The question of obtaining pure mating is a vexing one frequently. You can not hope to attain the highest percentage of pure mating until you have done all you possibly can toward Italianizing your locality. For a temporary emergency, drone-excluding entrance-guards can be put on the entrances of colonies in the locality that have undesirable drones. At the same time you should insure plenty of young vigorous Italian drones that will be flying at the time your young queens would go out to mate. In order to improve the locality permanently it often pays for a queen-breeder to furnish young laying queens to neighboring beekeep-

ers at a low price, say about half the usual amount charged. If this is done in July or August, when queens are cheapest, the expense is not great, and for the next season the drones flying will be largely Italians. Of course, if there are a large number of colonies of bees living in trees, or in old box hives, about all one can do is to make sure of plenty of young vigorous drones flying in his own yard.

Questions.—Does a temperature of 16 degrees above zero kill wax-moth eggs, or do they survive the winter and hatch out in the spring to start a crop of moths? Do the larvæ become dormant with low temperature, survive the winter and hatch out in the spring? Can you tell me whether at this time of the year, combs may be stacked moth proof and be safe without further notice until they are needed?

Texas.

T. P. Robinson.

Answers.—We believe there has been no scientific determination of the exact temperature required to kill the wax moth, pupa, larvæ and eggs, respectively. However, F. B. Paddock of the Texas Agricultural Experiment Station in bulletin No. 158, June, 1913, states that wax moths sometimes stand a freezing temperature for as long as three days, and in well protected places can stand an outside temperature of 26 degrees Fahr. for five days. In general, a freezing temperature is considered sufficient to kill all moth eggs and larvæ. During the winter about one-third are in the pupal stage. These being better protected are able to withstand greater extremes of temperature, and at the advent of warm weather will hatch out and begin their work of destruction. The best way to treat the combs is to pile them in moth-proof piles and then examine them often, giving them a carbon bisulphide treatment as soon as evidence of moths occurs.

Questions.—(1) What is the easiest way to find the old queen when re-queening black bees and one's sight is not good? (2) Suppose one-day-old virgins or young laying queens were properly introduced without de-queening, about what percent would survive?

California.

L. T. Ayers.

Answers.—(1) The hive should be opened during the middle of the day and the bees smoked as little as possible. As black bees run so rapidly, it is a good plan to have a person at each side of the hive, only one handling the frames. Beginning at the edge of the brood nest, carefully examine one frame after another. When a frame is pulled out, the queen will probably be frightened and run to the side of the comb furthest from the manipulator. So the chances are that the queen will be first seen by the one not handling the frames. As fast as the frames are examined, they should be placed in an empty hive body, for after the frames are removed the queen may be found running about wildly on the bottom board or further side of the hive. When working alone, begin taking out the frames from the further side of the brood nest, for when a frame is removed, a black queen often runs

to the unexposed side of the adjacent frame, which is the side that first comes in view on removal of the next frame. If one's sight is not good and he has no helper, perhaps the easier method would be to attach a queen trap to the entrance, lift out all the frames and place them in an empty hive, carefully examine the old hive to be certain she is not among the few adhering bees and then after shaking each frame at the entrance replace it in the old hive. When the bees have run in, the queen will be found at the entrance.

(2) It is difficult to state what per cent would survive. Probably for an expert 50 per cent might be killed and for a beginner as many as 95 per cent. Young laying queens are much easier to introduce than virgins. Three- and four-day-old virgin queens may sometimes be introduced without even de-queening, by the Miller smoke method as given in the A B C and X Y Z of Bee Culture under "Introducing." But we would caution that one-day-old virgins are too weak to be introduced without de-queening.

Questions.—(1) Which are the better frames: Langstroth or Danzenbaker? Why? (2) How many extra supers for each hive should one have for safety? (3) Should all the hives be uniform, that is, the same make and size?

Michigan.

Wm. C. Leonard.

Answers.—(1) Most of the leading beekeepers greatly prefer the Langstroth frame. It is much better for wintering, as it leaves the cluster in a higher, warmer place, further from entrance drafts. Moreover, the additional space in the Langstroth frame gives a better chance for contracting the brood chamber in winter and still leaving the bees with plenty of stores. Our experience has been that the Danzenbaker frame is a big nuisance in handling, and the colonies with these frames need more frequent attention, as they are more inclined to swarm and also are not as apt to provide themselves with winter stores. (2) That depends upon whether one leaves all of the extracting to be done after the season. If so, five or six shallow supers or three deep ones would probably be plenty for your locality. (3) Yes, it will save much time, trouble, and expense.

Questions.—(1) I like the dimensions of the eight-frame hive; but for a divisible brood-chamber hive which do you think is preferable—an eight- or ten-frame hive? Why? (2) Do you consider the divisible brood-chamber hive as good as or better than the ordinary style?

Minnesota.

J. N. Johnson.

Answers.—(1) Many use the divisible brood-chamber idea for only a short time before and after the opening of the honey flow. In that case the deep ten-frame chambers are generally used. Most of those who use the plan thruout the year prefer the shallow ten-frame or the deep eight-frame brood-chambers. (2) For ourselves we prefer the ordinary standard ten-frame hive, giving the queen two stories when necessary.

ANSWERS BY C. C. MILLER.

Question.—I am having a terrible scourge of European foul brood. Probably 200 out of my 300

colonies are badly afflicted. I have been caging my queens for about 20 days until the bees clean up. A friend, who is visiting me, says I should disinfect my hive tool, hands, etc., in going from an affected colony to a healthy colony, also I must melt my combs, boil my frames, and scald or burn my hives. What do you say? I have not taken the precautions mentioned, as I believed European foul brood to be a disease of the queens and brood only.

California.

A. E.

Answer.—In a severe case of European foul brood, I wouldn't cage the queen, but kill her. Even in a mild case it may pay to kill the queen, if she is below par and you can replace her with an Italian of good stock. In a mild case, with a good queen, I would cage. But I don't believe it's advisable to cage more than ten days, nor in any case to have the colony go longer than ten days without egg-laying. You say they clean up in about 20 days. Yes, there may be dead brood present up to the end of 20 days, or even longer. But it's very dead and so dried up that it is not likely to do any harm. The kind that does harm is that which has been dead only a short time, and not yet too disagreeable to be still eatable. And you'll find none of that kind left, if you stop the queen's laying for ten days. Be sure to make your colonies strong.

As to disinfection, upon my first acquaintance with European foul brood I melted combs and boiled frames, but gave it up and afterward got along just as well, if not better. Altho combs that are affected with American foul brood must be melted up, it seems an unpardonable waste to destroy a single comb on account of European foul brood. Hives need no disinfection, and indeed some hold that no disinfection of hives is needed with American foul brood. Yet when all that is said, it remains very important to guard against carrying the disease from an infected colony to a healthy one. If a hive tool should be thrust into a diseased larva at the right stage, it would be easy to infect the next colony. So I am careful about my tool and hands. The quickest way to disinfect the tool is to thrust it into the ground a few times. If the hands do not become daubed, merely handling the dry frames needs no disinfection. Whether the disease can be carried by the honey or not, I take no chances, and if the hands are the least daubed, I always clean them.

Question.—I have read about swarm prevention in your book "Fifty Years Among the Bees." Do you think that following your plans closely will actually prevent any from swarming when they are in good stores and strong in spring?

Answer.—Yes, any of the plans there given involving the cessation of egg-laying for ten days have proved effective with me, no matter how strong or well provisioned the colony.

Question.—I have read about clipping; do you think that would be best for one with 15 or 20 colonies?

Answer.—If I had only one colony, I should want the queen clipped, and I should clip if I had 500 colonies or more.

C. C. Miller.

SINCE we have our outfit in readiness and have learned a little concerning the interior of the hive, we are now ready to get our bees and to begin the actual business of beekeeping.

Where and How to Get Bees.

Altho one might obtain a start by getting bees from the bee-trees or by purchasing colonies in old box hives, we do not recommend either plan for the beginner. The first is interesting, but entails considerable work, and is hardly advisable unless one has some knowledge of bees. The second is undesirable because it is impossible to remove the combs and learn the condition of the bees one is buying. Still, since many beginners will purchase their bees in box hives, we shall in this same talk describe the method of transferring to modern hives.

Another common plan of getting bees is to send to some breeder for nuclei (small colonies) on combs, or for combless packages of bees, a queen being ordered with each. Of these two plans the combless package is much the cheaper and safer investment, since there is no danger of acquiring foul brood as in the case of a nucleus sent on combs. If two-pound or three-pound packages are obtained early in May, and given a little brood, they may, by stimulative feeding, be built up into good colonies six or eight weeks later, and in many localities might, therefore, be in time for part of the main honey flow. But even a two-pound package obtained the last of May or June, could by fall be increased to one full-sized colony all ready for the fall flow. However, unless one can obtain an entire colony to supply the desired brood, we would be inclined to discourage the beginner from buying the combless packages.

A two-pound package (and we advise buying no smaller package) should be hived on four or five drawn combs, one containing some young larvæ. More combs may be added later as the colony increases in size. These three combs are shoved over against the side of the hive and a division-board placed at the inside. Also the entrance of the hive should be contracted to but a small opening in order to prevent robbers from entering. Upon the arrival of the bees they should be placed in the new hive in accordance with the directions that accompany them.

Two cups of syrup consisting of two parts of sugar to one of water should be given the bees every other day. It may be fed in Mason fruit jars or friction-top pails with lids pierced with only one or two holes to insure slow feeding, which is conducive to rapid breeding. Snugly covering the tops of the frames, and the feeders inverted over the brood-chamber, should be a

TALKS TO BEGINNERS

By the Editor

warm cover for retaining the heat of the cluster.

By far the best plan is to buy entire colonies of bees from some reliable breeder or

from a beekeeper in one's own vicinity. These may be purchased in the hives just as they stand; or, better still, an agreement may be made by which the buyer provides the beekeeper with new hives in which to hive the new swarms. These new colonies are taken care of by the purchaser, but not removed until the end of the season. Even tho obliged to pay a little more for the sake of having the bees hived, it would certainly be cheaper than to buy bees in a swarm hanging from a limb thus necessitating the dropping of one's work at a minute's notice.

How to Know the Value of a Colony.

If bees are to be purchased in the hives, it is a good plan to take along an experienced beekeeper to determine whether or not the stock is diseased. If in healthy condition, their value will depend entirely upon the size of the colony; the age, prolificness, and strain of the queen; the condition of the combs, whether crooked, full of drone cells, etc.; the amount of stores contained in the combs; and the condition and style of the hive. Bees that are purchased in old hives should be transferred to modern ones if one expects to get a good crop the first season.

Moving the Bees.

After the colonies are purchased there arises the problem of moving them to their new home. When bees first fly in the spring they circle about the hive, noting its exact location in regard to its surroundings. Later, if the hive is moved, the bees return to this same spot, and, being unable to find the hive, become lost. With the exception of bees in a swarming condition, those colonies moved a distance less than a mile will thus lose many of their bees. For this reason if one wishes to move a colony only a short distance, it should first be moved to a place two or three miles away. Then a few weeks later it may be moved to the desired spot with no loss of bees; for by that time the original location will have been forgotten. If one wants to move but a few feet, this may be done with less trouble. The hive may be moved a foot or so the first day, and each successive day the distance increased until they are moved a yard or more at a time. The bees appear to get into the habit of expecting their hive to be removed a little further each day.

About the quickest and easiest way of moving bees is by auto. Any sudden lurching or jerking of the combs sidewise might cause them to break, especially if heavy with honey. Therefore if the road is very rough, so that one is obliged to drive slowly, the

hives should be placed with the frames crosswise of the car. If the road is smooth, perhaps the frames should be lengthwise of the car; but in this case it would make but little difference.

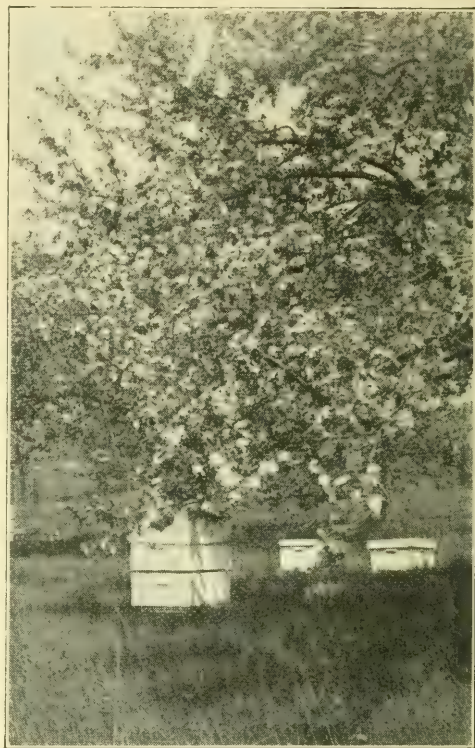
To prepare bees for moving, the night before (or early in the morning, before any bees are stirring), screens should be tacked over the full-sized entrances, and over the top should be placed a screen attached to a rim about two inches in depth. This allows a nice, cool clustering place; for during joltings of the journey they will become so active that the temperature of the hive will be increased considerably. This is the reason for providing all this extra ventilation. If the weather is cool, of course they will need less ventilation, and in that case the screens may be partly covered. The upper screens and the hive bottoms may be attached to the hives proper by means of a long staple at each corner. If moving some distance, however, it might be safer to fasten the bottom-boards to the hives by means of a screw driven thru the bottom-board and up into the middle of each side wall of the hives. Two screws to each hive hold them very securely.

Of course, when buying bees the chances are that the hives will be old-fashioned, and the bottom-boards attached; also there may be large bee-spaces in various places; but the main idea is to shut in the bees securely and to have plenty of ventilation at the entrance and top of the hive.

Where to Place the Bees.

An ideal location for the bees would be a southeast slope having a little scattered shade and somewhat open woods on the north and west. Still, almost any well-drained spot not too near passersby can be made

roof, altho the latter place would be rather hot during the summer. Colonies kept in the attic should be placed near the wall and pro-



No better location for the hives than right under the apple trees.

vided with an outside entrance. There should also be a window that could be opened to allow the escape of bees that will collect on it whenever the hive is opened.

Transferring to New Hives.

Soon after being moved and placed on the new stands, preferably during the middle of a warm day in fruit bloom, the colonies in old, undesirable hives should be transferred to new ones of standard dimensions. The following is an easy way of transferring: Place on the stand a new hive filled with drawn combs, if possible having in one of the combs a patch of young larvæ (unhatched bees which look like little white worms). After smoking the colony a little, remove the bottom-board and place the old hive over the new, tacking on strips if necessary, so that there will be no open cracks between the two hives. Then blow smoke down thru the old story, gradually driving the bees and queen below, after which insert a queen-excluder between the two hives. In three weeks' time the worker brood will all be hatched from the old hive, when it may be removed and the combs saved to be rendered into wax. (See Transferring, as described on page 172 of the March issue.)

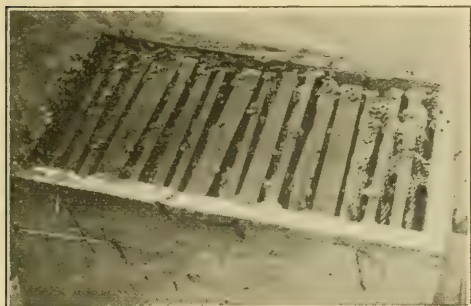
When no combs are obtainable, colonies



A poor location for a hive, near to and facing a walk, where the bees will be annoyed by passers-by.

a suitable location if a windbreak is provided on the north and west. The small beekeeper need look for no better location than right under the apple trees of his own back yard; or, lacking the back yard, he may place the hives in the attic or on a flat city

may be transferred into the new hives onto frames of foundation and then fed continuously until the foundation is drawn out into comb; but it gives the bees a much nicer start to give them drawn combs. This spring



A look into an old-fashioned box hive.

there ought to be little difficulty in obtaining such combs from beekeepers in the vicinity whose bees have died during the winter; but one should make sure that such combs do not come from diseased colonies.

Feeding the Bees.

Unless there happens to be plenty of stores in the combs, the colonies will need to be fed after transferring. It is always safer for the beginner to feed candy or combs of honey rather than syrup, as there is less danger of starting robbing. During a dearth of honey there is always a chance that bees



A queen laying and her attendants.

may get a taste of stolen sweets, and soon be in a regular turmoil of excitement. Whenever the bees begin robbing, the entrances should be contracted and loosely covered with dampened grass. This subject will be discussed at greater length in a succeeding "talk."

Re-queening.

In all probability the bees purchased will

not have the distinguishing marks of Italians—three yellow bands on the abdomen—but will be either blacks or hybrids which are a cross between any two strains. Since the Italians are the best strain, being very good-natured, excellent honey-gatherers, and quite resistant to disease, it will be advisable to re-queen the poor stock with good Italian queens, which may be purchased from any reliable breeder, and each introduced according to the directions which accompany her, the old queen being removed at the time of introduction.

Clipping the Queen's Wings.

During the middle of a warm day in fruit bloom all laying queens should have their wings clipped in order to prevent the bees from swarming later and decamping to the woods; for with clipped wings the queen cannot fly, and the bees will not leave without her. Any warm day in May, when most of the field bees are out gathering nectar,



How to hold queen when clipping wings.

the queen may be easily found. She will probably be on one of the central frames of brood, and may readily be distinguished by her marked dignity, larger size, and surrounding circle of worshippers, as described in our last lesson. On no account should a queen be held by the abdomen, as it is very easy to injure her in this way. She should be picked up by the wings, transferred to the left hand, and with thumb and fore finger held securely by the thorax, as shown in the illustration. About two-thirds the length of one pair of wings should be clipped, care being taken not to render her useless by clipping a leg at the same time. Those feeling a little timid about clipping valuable queens might first practice on drones until the trick is learned. (Neither drone nor queen can sting you.)

In general we may say that the ordinary May work consists in keeping the colonies sufficiently warm, well supplied with good queens and plenty of stores, and, along toward the end of the month, provided with supers if indications seem to warrant them. This subject is more fully treated in the article on page 273, this same number.

I SUPPOSE

that at least most of you have read what I have had to say during the past few months about windmills and electricity. On page 939 of the December issue of GLEANINGS some mention was made of George Manikowske, the inventor of the electric windmill, or, at least, one of the inventors. Well, on page 12 of the January issue I informed you that he expected to come down here to my Florida home and install the plant. Of course I had to mention my undertaking in our week-day prayer meeting. I also promised to bring the young inventor to our prayer meeting if I could get him to come. Our good pastor, Dr. Hallock, warmly seconded my undertaking. Now, I knew almost nothing of this young man whom I had never seen, and I recognized that he *might* be one of the prayer-meeting kind, and he might also be far away from it. I watched anxiously for him, and I might confess I *prayed* for him. I had gathered that his lifework (and I might say his life passion) had been windmills and electricity, and, as a matter of course, I expected it to be one of the events of my life to meet him. It was. He came to prayer meeting, and, at the request of our pastor, gave us a talk of ten minutes, mostly in regard to the Y. M. C. A. work in his State of North Dakota. I am going to have quite a little to say about him, because I think it may be helpful to the thousands of other young men who read GLEANINGS. He neither drinks, smokes, nor uses tobacco in any form, and uses tea and coffee only when it might look singular not to use them as others do. His appearance shows the result of his pure, clean life. He is 29 years old, weighs over 200, and has a wife and two fine children whose pictures I have seen.

I have owned for nearly ten years a Sears automobile. Until recently I have been able to make all repairs with but little trouble. Just before George came I had about decided to put it on the scrap-heap. I couldn't think of selling it, nor even giving it away, for that matter, to have some one else have a like experience. It made me think of the woman (Mark 5:26)



Behold an Israelite indeed, in whom is no guile.—JOHN 1:47.

Know ye not that your body is the temple of the Holy Ghost?—I. COR. 6:19.

But Daniel purposed in his heart that he would not defile himself.—DANIEL 1:8.

who "spent all she had and was nothing bettered but rather worse." I was told that expensive new parts were needed, but still the old trouble remained.

Well, after the mill was up and running, George got his eye on my unfortunate

"Sears," asked a few questions, and suggested he might fix it for me. It is now running as well as, perhaps better than when new, and runs on the magneto without any help from the batteries—something it has not done for years. His keen, bright way of going at once right to the spot where



This is the windmill that turned the dynamo, that stored the batteries, of the electric auto (as it stands in its garage), that carried the potatoes to market.

the trouble lies is in sharp contrast to some of the young men in repair shops who have to puff at a cigarette before diagnosing the seat of trouble. I have had for years a pumping windmill that starts before the tank is empty. George fixed it in a few

minutes so that if you draw from a hydrant only a single pailful, it will start at once and replace the pailful. Several of my friends had automobiles with peculiar troubles that seemed to defy ordinary skill. It seemed just fun for George to "chase down" and "make good" all these, while waiting for some delayed part of our electric outfit.

He is the very model of a strong, healthy physique. Even his 200 pounds or more seems no impediment to his climbing windmill towers like a squirrel. Perhaps never before in the world's history was there such a demand for clean, vigorous manhood, and a bright, clear mind comes only with a clean, healthy body.

There are many evidences just now to show that wind is soon to receive more attention than ever before. Below is a clipping from the *Practical Farmer*:

While looking around for extra labor on the farm this year, let's not overlook our two greatest helpers—wind and water. These two forces are often only thought of as being destructive, altho they have of late years been put to various kinds of work thru the agency of modern equipment. It is no uncommon thing now to find a farm illuminated and much of the light labor done by electricity generated by the creek which has always been running down hill. Washing, ironing, cleanings, separating, churning, and a host of men's chores are done by water power at practically no expense after the first installation.

Wind, which is just as free as water as a source of power, has in many cases saved work and time in doing some of the necessary farm labor. This year its possibilities can be appreciated more than ever before, since it will take a working in unison of all forces to see us successfully thru a war which we are fighting for our very existence.

Here is another, clipped from an advertisement of a pumping windmill:

You still get the wind free. With prices of everything soaring skyward, wind is free. We hope it will stay so. Utilize it and pump your water for nothing.

In regard to running automobiles by wind power, at present (April 2) it would seem that, to store the batteries to full capacity* (which must be done at least occasionally), a pretty strong wind for quite a considerable time is needed—very much stronger than is required for lighting the house and outbuildings and doing other similar work. Of course we have a device that throws the current on and off, so we can utilize the breeze that springs up in the night, as I have explained on former pages; but if one expects to run his car several miles a day, and do it every day, it would probably require a windier locality (say North or South

Dakota) than those we have here in Florida, or else a bigger windmill. Our is only 14 feet.

Permit me to quote a single sentence from a letter just at hand from H. H. Root:

Dear Father:—I wish I could see you this morning delivering your potatoes by a power derived from the sky. I imagine that the new scheme of transportation is giving you a greater thrill than the finest railroad train or automobile ride ever gave you in the past, and well it may.

Huber has hit it exactly in the above, and the picture below shows the auto and myself with one of the loads of potatoes that I have been carrying to town daily for the past two weeks.



Some of the potatoes that were hauled to market on the auto propelled by the windmill-made electricity.

Just a word in closing about lighting our homes by wind power. A very gentle breeze indeed will light one or more electric globes, especially if you use the 32-volt globes generally used in the home-lighting plants. While the mill was standing still I placed one of these in our dining-room. Mrs. Root awakened in the night and saw such a blaze of brilliant light that she first thought the house was on fire. You see a breeze had started up. Without a battery the light dances up and down, from nothing at all, and just now the expense (and upkeep) of the battery is the great obstacle in the way of home-lighting outfits. It is true the electricity goes straight from the windmill to the work; but the battery serves to take and store, whenever there is a surplus, and also to give out when there is not enough current or when the mill stops entirely. The same batteries that run the automobile will answer for lighting and for other purposes providing you have wind enough for both.

*I have succeeded in getting 62 miles on one full charge here in Florida, where we have no hills. Unless, however, you have paved roads, the Florida sand is even worse than hills.

THE ELECTRIC WINDMILL DURING A THUNDER STORM.

Yesterday (Apr. 7) we had a thunder storm with quite a gale of wind. The new windmill did its work beautifully. It took the whole battery of 28 cells, and at times gave 25 amperes of current. As a sample of the electric current, a screw began to work out in the "cut-out" device. Without taking the trouble to cut off the current, I started to turn up the screw. A blinding light followed and the tempered steel of the screwdriver began melting and dropping off as if it was sealing wax. The mill took the gale very quietly, with only about 25 revolutions per minute during the biggest squalls.

"ON THE WINGS OF THE WIND;" WIND INSTEAD OF CORN, OATS, AND HAY FOR HORSE FEED.

It is now April 9, and we have had a pretty good wind for several days. The result is, that after using the electric auto all I wish during the day the windmill stands ready to replace promptly the amount of current used. Let us consider a moment what this really amounts to as an achievement in scientific invention. I ride in the easiest-running carriage (the electric automobile) that has ever been made, and the most easily managed of any vehicle that has ever been constructed. I can go thru a crowd so slowly and so still that no one knows I am near until I gently press against him; or with the six different speeds I can go as fast as any one should go; and when I get home I drive into a garage that can be made as nice as a lady's parlor—no harness to remove and no stable to clean. Neither is there any corn, oats, or hay to be provided for this modern steed, for he feeds on wind instead of corn, oats, and hay which cost money, as many of us know to our sorrow. You simply drive in, press a button, and your horse will be both fed and watered (with wind) while you do something else, or, stranger still, *while you sleep*. You may suggest a gasoline car. But, my good friend, gasoline costs money; but not so with wind. Another thing, gasoline smells; and the burnt gases have cost the lives of several where they have been so thoughtless as to run the auto in a close room, say in cold weather. The modern windmill, running on ball bearings, can almost as well be left running as to stand still. I tell Mrs. Root, if she wishes to go anywhere, that now is the time, for it costs no more to travel than to let the auto stand still.

I have dear friends, received during my busy life many kind words, as most of you know; but a kind word or two that pleased

me most was reported to me by my young friend Manikowske. It came from Rear Admiral Garst, of the Navy (now retired), who has a fine residence here, when some one remarked in his hearing:

"Is it likely that Mr. Root will ever get his money back for such an investment?"

He replied, as reported to me, as nearly as I can recall, "If I understand Mr. Root, he does not expect to get his *money* back. His pay will come in the knowledge that future generations (perhaps unborn) will be benefited by his experiments."

WILL THE WAR RESULT IN A BETTER MANKIND, THE WORLD OVER?

Dear Mr. Root:—I am not an atheist, socialist, anarchist, nihilist, Republican or Democrat—and not what may or might be called religious, but have been a reader of your GLEANINGS off and on for years, but have been a subscriber for only two years. There are so many papers, etc., that one cannot get them all. What use I have for your magazine is your innocent, simple way that you do your writings. Do I believe them? Not all, but you put out some good advice. I cannot quote exactly, but in one of your papers you said something like this: "God is letting this war go on to create a better feeling in mankind." Do you believe it?

There are lots of things I would like to say but just this one more, was: I have read in your writing of the harmony that there is in your family; altho I am not Irish, will say more power to you. I have preached the bundle of sticks for years but have never got a convert. It's all for themselves and the devil for the crowd.

Cleveland, O.

W. B. Kitteringham.

Dear Friend:—I may have said, and I say again, we have many evidences that might indicate that God is letting the war go on that the *final outcome* may be a better *mankind*, the world over. I cannot name a tenth part of them here. The death of the liquor traffic, saving of food, the study of the best and most nourishing foods, gambling on wheat, extortion in food prices, better care of the babies, saving the money that has been wasted in folly, doing away with gambling, etc.

Now, a word about yourself, dear brother. Go down on your knees, and ask God to direct you and give you light. Go to church *regularly*. Go to Sunday school. Be on hand in the Bible class every Sunday. Accept "the Lamb of God, who taketh away the sins of the world," as your helper and your guide. I am praying for you as I write this letter.

God permits wickedness to go on at times, that indifferent people like you and I, may wake up and do something. Some of our best laws have been enacted, just because of indignities perpetrated on helpless women and children. May God guide you and give you faith.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeier & Arpe Co., 139 Franklin St., New York.

FOR SALE.—Alfalfa-sweet-clover blend honey in 10-lb. pails. J. T. Lewis, Gooding, Idaho.

FOR SALE.—Sixteen 58-lb. cans light amber extracted honey at \$8.50 per can. J. H. Zeiner, Paragould, Ark.

RASPBERRY HONEY.—I have ten 60-lb. cans of raspberry honey that is for sale at 20 cts. a pound. Elmer Hutchinson, Lake City, Mich.

FOR SALE.—New orange-blossom honey in new round jacketed 60-lb. tin cans at 20 cts. per lb. G. H. Adams, Gen. Del., Palmetto, Fla.

6,000 lbs. choice clover; 3,500 lbs. white aster, free from dregs; first-class in every respect, packed in bright 60-lb. tins, two in a case. Make me your best offer F. O. B. my station. If interested I will answer. H. C. Lee Brooksville, Ky.

HONEY AND WAX WANTED

Small lots of off-grade honey for baking purposes. C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

WANTED.—Comb and extracted honey. J. E. Harris, Morristown, Tenn.

WANTED.—Honey and beeswax. Send sample and price. C. S. Fryer, 386 Halsey St., Portland, Ore.

Cash at your bank for carlots and less of comb and extracted honey. Wesley Foster, Boulder, Colo.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares. Superior Honey Co., Ogden, Utah.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

WANTED.—Extracted honey, carload or less quantity. We can supply 5-gallon cans for your crop if needed. Hoffman & Hauck, Richmond Hill, N. Y.

WANTED.—Extracted honey, all kinds and grades for export purposes. Any quantity. Please send samples and quotations. Betancourt & Leganoa, 59 Pearl St., New York City.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

BASSWOOD AND EVERGREEN TREES.—Send for list. Hansen Nursery Co., Niles, Mich.

FOR SALE.—100 ten-frame hive-bodies, in flat—a bargain. Ray C. Wilcox, Rt. 4, Ithaca, N. Y.

FOR SALE.—5 Danz. hives, 10 Danz. supers, with 5 telescope caps. All new. Bargain. J. M. O'Dwyer, 1208 E. Carter Ave., Ashland, Ky.

FOR SALE.—Pure maple syrup in one-gallon cans at \$2.50 per gallon. Six gallons or more \$14. The M. C. Silsbee Company, Avoca, N. Y.

Beekeepers, let us send you our catalog of hives, smokers, foundations, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

FOR SALE.—Used honey cases, two 60-lb. cans good as new, 75c per case; five or more, 70c each. Henry Shaffer, 2860 Harrison Ave., Cincinnati, O.

FOR SALE.—50 dovetailed supers, 8-frame; 10 dovetailed for 10-frame 4¼ sections, second-hand, painted, in good condition. Write for prices. Wm. W. Case, Frenchtown, N. J.

Pennsylvania Distributors for Root Bee Supplies, save time and transportation expense on all standard hives, sections, etc., at catalog prices. Prothero, Bailey & Goodwin, Dubois, Pa.

"BEST QUALITY" comb foundation for L. or H. frames; 25-lb. lots, medium brood, 55c; light brood, 60c. Pure natural beeswax, not "Weed Process." J. J. Angus, Grand Haven, Mich.

FOR SALE.—25 8-fr. dovetailed hives with metal covers and reversible bottoms, also supers to go with them for the plain sections. All in good shape. Price, \$25.00. G. L. Allen, Wysox, Pa.

THE ROOT-CANADIAN HOUSE. — 73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

Bargain Prices.—75 ten-frame iron-end super boards, 12 cts. each; 1,800 No. 1 sections, 3½x5x1½ at \$4.00 per 1000. One 12-inch foundation-mill for medium brood, good condition, \$12.00. I. J. Stringham, Glen Cove, N. Y.

FOR SALE.—Two six-inch foundation mills, in perfect condition. One is a Root mill. Would exchange one of these mills for a Dado head that is in good condition. Fred D. Lamkin, King Ferry, R. D. No. 26, N. Y.

FOR SALE.—Two typewriters. Latest improved Blickensdorfer in leather carrying case. Never used. Cost \$55. Price \$20. L. C. Smith & Bro., No. 2, second-hand but in good working order. Cost \$100. Price \$20. L. W. Lighty, East Berlin, Pa.

On account of flood destroying my bees I must sell my equipment consisting of No. 15 Cowan extractor; 200 extracting combs, L. size; several hundred frames, and other small accessories, everything in good condition. What am I offered? Geo. Whitcomb, Corydon, Pa.

FOR SALE.—Owing to the water getting in my bee cellar and drowning all my bees, I will offer my entire equipment, consisting of 8- and 10-frame L. hives with 100 extracting supers, with bright extracting combs. Will sell regardless of cost. No disease. Satisfaction guaranteed. Wm. H. Keyser, Rt. 7, Schenectady, N. Y.

FOR SALE.—One Boardman solar wax extractor, \$7.00; one Rauchfuss solar wax extractor, \$5.00; one Doolittle solar wax extractor, \$3.00; one 2-frame Novice honey extractor, \$5.00; one Root steam uncapping knife with boiler and stove, never been used, \$5.00; one 26-lb. box of Root's light brood foundation for Hoffman frames, 60c per lb., or \$15.00 for the lot; one 5-lb. box thin super foundation, 15¼x3½, 65c per lb.; 12 new 1½ story 8-frame extracting hives with wired frames and full sheets of foundation, \$5.00 each. I can furnish additional supers if desired at a very reasonable price. All are the Root make of hives. C. A. Gaines, Versailles, Ky.

FOR SALE.—30 10-fr. hives and frames; 9 hives with combs and frames; 10 empty hives; 15 hives with extracting supers, complete; 73 hives with comb supers, complete; all dovetailed. Also 40 tops and bottoms each; one show case; a few Alexander and Miller feeders, gates and division-boards. Everything in excellent condition. The whole lot at half list price.

Fred Hobson, 6840 Lincoln St., Chicago, Ills.

AUTOMOBILE REPAIRS.

AUTOMOBILE owners should subscribe for the AUTOMOBILE DEALER AND REPAIRER; 150-page illustrated monthly devoted exclusively to the care and repair of the car. The only magazine in the world devoted to the practical side of motoring. The "Trouble Department" contains five pages of numbered questions each month from car owners and repairmen which are answered by experts on gasoline-engine repairs. \$1 per year. 15 cents per copy. Canadian subscriptions, \$1.50. Postals not answered. Charles D. Sherman, 107 Highland Court, Hartford, Conn.

POULTRY

Single-comb White Minorcas. Eggs, \$5.00 per 15. White Rocks. Beauty, symmetry, and unexcelled layers; \$3.00 per 15. Gladiolus bulbs, 30 cts. per dozen; \$1.00 per 50, assorted colors. Satisfaction guaranteed or money cheerfully refunded.

C. Augustus Raschke, Kingston, N. Y.

WANTS AND EXCHANGES

WANTED.—A 2 or 4-frame automatic honey extractor. O. H. Gibbs, Waldron, Mich.

WANTED.—10 to 100 swarms of bees, not over 50 miles from Bellevue.

N. B. Querin, Rt. No. 7, Bellevue, O.

PRINTING.—Will exchange printing for bees and fixtures. What have you, and what printing do you need? J. W. Rice, Fort Smith, Ark.

WANTED.—Full colonies of bees on Hoffman frames, Italian preferred, free from disease, near New York city. J. G., care of The A. I. Root Co., 139 Franklin St., New York City, N. Y.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

REAL ESTATE

VIRGINIA, N. C., W. VA., & Ohio Farms at \$15.00 per acre and up offer big values for the price. Best climate, markets, schools and transportation. Good land and neighbors. Write P. H. Laume, Agrl. Agt., N. W. Rwy., 246 Arcade, Roanoke, Va.

BEAUTIFUL HOME FARM, improved rich soil, well located, good buildings, 100 colonies of bees, up to date; best honey-producing location in the State; not crowded; average for past 7 years, 105 lbs.; 5 acres of ginseng and goldenseal, all ages, in fine shape; half artificial shade, half natural. Will sell a part or all of semiscale. A wonderful opportunity—a bargain. Reason for selling, poor health. W. M. Penrod, Ronnelly, Minn.

FOR SALE.—Largest and best apiary in western Colorado. Also small dairy and fruit ranch. Good buildings. Reason for selling, asthma. Have moved twice before in 20 years. September delivery. J. G. Puett, Collbran, Colo.

FOR SALE.—102 acres homestead relinquishment, ½ mile from Pacific Ocean. First class bee location, good stock country, good fishing and hunting, fine climate; place well improved; has barn, shop, chickens, bees and tools, all for \$700 cash if taken at once. Write or apply to A. Johansen, Heceta, Ore.

A small California farm earns more money with less work. Raise the crops you know about—alfalfa, wheat, barley, etc.—also oranges, grapes, olives, and figs. Ideal for dairying, pigs, and chickens. No cold weather; rich soil; low prices; easy terms; good roads, schools and churches. Enjoy life here. New comers welcome. Write for our San Joaquin Valley, also Dairying and Poultry Raising illustrated folders free. C. L. Seagraves, Ind. Com. A. T. & S. F. Ry., 1927 Railway Exchange, Chicago.

BEEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, R. D. No. 3, Vincennes, Ind.

Try Phelps' Golden queens and be convinced, \$1.00 each. G. W. Phelps, Binghamton, N. Y.

Italian Bees and Queens; write for circular. Ira C. Smith, Dundee, Ore.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Courtland St., New York.

FOR SALE.—1918 Golden Italian queens; price list free. Write E. E. Lawrence, Doniphan, Mo.

When it's GOLDEN it's PHELPS. Queens, \$1.00. C. W. Phelps & Son, Binghamton, N. Y.

"SHE SUIT ME" Italian queens; \$1.00 from May 15th to Oct 15th.

Allan Latham, Norwichtown, Conn.

Try ALEXANDER'S Italian queens for results. Untested, each, 75 cts.; 6 for \$4.25; \$8.25 per dozen. Bees by the pound. C. F. Alexander, Campbell, Cal.

Italian queens, THE HONEY GATHERERS. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

FOR SALE.—Fine Italian queens at 90c each; \$9.00 per doz. Ready April 15, safe arrival guaranteed. T. J. Talley, Greenville, Rt. 3, Ala.

Get my price list on queens and bees, the best three-band and five-band honey gatherers.

H. A. Ross, Evansville, Ind.

FOR SALE.—13 supers, nailed and painted, for 4x5x1¾ sections—some never used; \$10.00 for the lot. J. D. Allen, Avondale, Pa.

Bees on shares or for sale; 9 yards fully equipped. Give reference in first letter. Never had a honey failure. M. C. Engle, Herradura, Cuba.

QUEENS.—High-grade three-band Italians after May 15, 60c each; \$6.00 per doz. Pure mating and satisfaction guaranteed. A. F. Bray, Kelso, Tenn.

BREEDING QUEENS.—I have a few extra choice Italian breeders for spring delivery. Price \$5.00 each.

J. E. Wing, 155 Schiele Ave., San Jose, Cal.

We have several hundred pounds of bees and 3-band Italian queens for sale, April 1st delivery; safe arrival guaranteed. Write for prices. J. A. Jones & Son, Hope Hull, Montgomery Co., Ala.

FOR SALE.—One to fifty colonies of Italian bees in 10-frame hives. Bees and hives are in A 1 shape. No disease. Price \$10.00 per colony. John C. Bull, 1013 Calumet Ave., Valparaiso, Ind.

PHELPS queens will please you, \$1.00.
C. W. Phelps & Son, Binghamton, N. Y.

Finest Italian queens. Send for method and price list. J. W. Romberger, Apiarist, 3113 Locust St., St. Joseph, Mo.

Tested leather-colored queens, \$2.00; after June 1, \$1.50; untested, \$1.00; \$10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

Italian queens. Golden and 3-banded bred from best selected stock. Untested, each, 75c; 6, \$4.25; 12, \$8.25. Select untested, \$1.00 each. Satisfaction guaranteed. G. H. Merrill, Liberty, S. C.

Three-band Italian queens at Shenandoah Apiary, ready May 15. Tested, \$1.25; untested, \$1.00; dozen, \$8.00.

S. Click, Box 16, Rt. 2, Mt. Jackson, Va.

QUEENS and bees by the pound; Golden Italians, Imported Blue Ribbon strain—the kind that gets results, ready May 10th. Write for prices. J. W. Rice, Fort Smith, Ark.

FOR SALE.—First class Italian queens and bees in season. Send for price list. Bees free from disease, safe arrival and satisfaction guaranteed.

M. Bates, Greenville, Ala., R. 4.

BUSINESS-FIRST QUEENS.—Three-banded and golden untested queens, \$1.00 each; also Belgian hares. Send for price list.

M. F. Perry, Bradentown, Fla.

FOR SALE.—Golden Italian queens of an improved strain; the bee for honey, hardiness, gentleness, and beauty. Untested, \$1.00; tested, \$2.00. Wallace E. Beaver, Lincoln, Ill.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1; 6 for \$5. Wm. S. Barnett, Barnetts, Va.

Bright Italian queens, ready April 15th, \$1.00 each. Safe arrival guaranteed. Write for prices of larger quantities.

W. W. Talley, Greenville, Ala., Rt. 4

FOR SALE.—Golden Italian queens which produce gentle yellow bees, the hardest workers we have known. Untested, \$1.00, tested \$1.50. Wildflower Apiaries, So. Trust Bldg., Little Rock, Ark.

FOR SALE.—Pure-bred Italian queens; also a few hundred pounds of bees. Queens ready April 15. Orders filled promptly or money returned.

O. P. Hendrix, West Point, Miss.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey gatherers as can be found; each \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

J. B. Brockwell, Barnetts, Va.

QUEENS.—We are breeding from the best Italian stock. Untested, \$1.00; select untested, \$1.50; tested, \$2.00. We have been breeding queens for more than 20 years. We guarantee safe arrival.

E. A. Simmons, Greenville, Ala.

Golden Italian queens that produce gentle and good honey-gathering bees. No foul brood. Select tested, \$1.50; tested, \$1.25; untested, 85c; 6, \$4.75; 12, \$9.00. After July 1, select tested, \$1.25; tested, \$1.00; untested, 75 cts.; 6, \$4.25; 12, \$8.00. No nuclei or bees for sale.

D. T. Gaster, Rt. 2, Randeman, N. C.

GOLDENS THAT ARE TRUE TO NAME.—Queen nucleus and bees by the pound. We receive hundreds of testimonials annually, write for list. Untested queens each \$1.00; 6, \$4.25; 12, \$8.25, write for prices in lots. We are now booking orders for early delivery.

Garden City Apiaries, San Jose, Calif.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, \$1.00; 6, \$5.00; tested, \$3.00; breeders, \$5.00 and \$10.00. C. W. Phelps & Sons, Wilcox St., Binghamton, N. Y.

FOR SALE.—Three-band Italian queens from best honey-gathering strain obtainable. Untested queens, \$1.00 each; 6, \$5.00; 12, \$9.00. Safe arrival and satisfaction guaranteed.

W. T. Perdue, Ft. Deposit, Ala.

FOR SALE.—Pure Italian bees of the famous Moore strain in 10-frame Langstroth hives, \$10.00 per colony; in 8-frame hives, \$8.00. Only a few colonies for sale. First orders accompanied by the cash takes them.

Elmer Hutchinson, Lake City, Mich.

ITALIAN QUEENS.—The best I have ever had; untested each \$1; five, \$4.50; ten, \$8; twenty, \$15; fifty, \$35; 100 for \$60. Delivery beginning in June. Orders filled on time and safe arrival guaranteed. Yours for more honey,

J. B. Hollopeter, Queen Breeder, Rockton, Pa.

FOR SALE.—Golden Italian queens. Untested queens, \$1.00 each; six, \$4.25; per dozen, \$8.25; 50, \$32.50; \$60.00 per 100. Tested queens, \$1.50; 1 frame nucleus, no queen, \$1.25; 2 frame, \$2.25; 3 frame, \$3.00; breeders, \$5.00 and \$10.00.

L. J. Dunn, 54 Broadway Ave., San Jose, Cal.

Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolans. Tested, \$1.00 each; untested, 75 cts. each. Bees per lb., \$1.50; nuclei, per frame, \$1.50. Send your order for bees early.

C. B. Bankston & Co., Buffalo, Leon Co., Tex.

Leininger's Strain of Italians have a record of 30 years. Queens ready in June; untested, each, \$1.25. 6, \$6.00; tested, each, \$1.75; 6, \$9.50. July and later, untested, \$1.00; 6, \$5.50; tested, \$1.50; 6, \$9.00. Every queen guaranteed.

Fred Leininger & Son, Delphos, Ohio.

THREE BANDED ITALIANS ONLY; queens, packages and nucleus, untested queens each, \$1.00; 6, \$4.25; 12, \$8.25. Write for prices in larger lots, also nucleus and pkgs. Booking orders now. If you consider quality, pure mating and low price, I am your queen-breeder.

H. G. Dunn, The Willows, San Jose, Calif.

FOR SALE.—Good Italian queens. Tested, \$1.00; six for \$5.40; untested, 75c. six for \$4.25; nuclei with untested queen, 2 frames, \$3.25; 3 frames, \$4.25; with tested queen, 2 frames, \$3.50; 3 frames, \$4.50. 1 lb. pkg. with untested queen, \$2.25; 2 lb. pkg., \$3.25; with tested queen, 1 lb. pkg., \$2.50; 2 lb. pkg. \$3.50.

G. W. Moon, 1904 Park Ave., Little Rock, Ark.

FOR SALE.—Achor's Pure Italian Queens, hardy and prolific. No disease. Satisfaction guaranteed. Before June 16, untested, 1 for 90c; 12 for \$10.00; tested, 1 for \$1.50; 12 for \$16.50. After June 16, untested, 1 for 75c; 6 for \$4.25; 12 for \$8.00; 50 or more, 65c each; tested, 1 for \$1.25; 6 for \$7.00. Best breeder, \$3.00.

W. D. Achord, Fitzpatrick, Ala.

FOR SALE.—105 colonies, ½ acre land, honey-house, bee-cellar, supplies for 1918; full equipment for comb and extracted; Barnes saw; work-shop, close to hard roads. This is one of the best locations in the State; 13 towns with population of 250,000 within a radius of 30 miles. Price \$2,500. With a normal year the returns should be over \$2,000.

W. J. Tilyou, Vanhornsriver, N. Y.

Warranted queens from one of Dr. Miller's breeders, \$1.00 each; \$10.00 per doz. Tested queens, \$1.50 each; breeders, \$5.00 to \$10.00. Package bees without queens, 1 lb. pkg., \$1.75; 2-lb. pkg., \$3.00. Ten cents per package less in lots of 25 or more. Add price of queen if wanted. Full colonies in 10-fr. hives, \$10.00 each; in 8-fr. hive, \$9.00; in Danz. hives, \$8.00. Tested Miller queens in all colonies.

Geo. A. Hummer & Sons, Prairie Point, Miss.

HELP WANTED

WANTED.—Two men for comb honey. Give age, wages and experience.

B. F. Smith, Jr., Fromberg, Mont.

WANTED.—Industrious student helper, not subject to draft, to work in apiary and garden.

W. D. Wright, Altamont, N. Y.

WANTED.—Young man of good habits to work with bees. State age, experience, and wages. Mrs. B. F. Detwiler, 1579 Gouin Blvd., Montreal, Quebec.

HELP WANTED.—Several men experienced or inexperienced to work in bee and queen yards. Wire us your offer. The Penn Co., Penn, Miss.

WANTED.—Man to work with bees the coming season. Address, stating age, experience and wages, to be furnished board. The Rocky Mountain Bee Co., Billings, Montana, Box 1819.

WANTED.—Young married couple to work outfit of bees and poultry on small orchard lot in city, including garden work. For particulars address 288 Gleanings in Bee Culture, Medina, O.

WANTED.—Beeman to commence work at once—large producers. State age, experience and wages wanted first letter.

Weber Bros. Honey Co., Blackfoot, Idaho.

WANTED.—A young lady, as a student helper in large apiary, run for comb and extracted honey, for 1918 season, fine chance to learn. Write immediately, giving wages, age, height, weight, experience and references all in first letter.

Earl L. Baker, Lake City, Mich., R. D. 3.

WANTED.—Young men of energy and character, of clean habits, not eligible for military duty, as helpers in our extensive bee-business. Fine chance to learn. Write immediately, giving wages, age, height, weight, experience, and references all in first letter, or expect no answer.

E. F. Atwater, Meridian, Idaho.

WANTED.—Industrious young man, fast worker as a student helper in our large bee business for 1918 season. Truck used for outyards and hauling. Apiaries located near summer resorts. Will give results of long experience and board and small wages. Give age, weight, experience, and wages in first letter.

W. A. Latshaw Co., Clarion, Mich.

SITUATION WANTED

WANTED.—Single man wants position as helper in bee yard. Understands beekeeping and carpentry. Wm. Marsh, 29 Wareham St., Boston, Mass.

WANTED.—Position as student helper in large apiary. Am single; have had some experience, and can give best of references as to my character and habits. Ward I. Reed, care of Brawnhurst Dairy, Greeley, Colo.

Special Notices by A. I. Root

HOME AGAIN.

It is now April 19, and here we are (Mrs. Root and I) back in our Medina home. How about the electric windmill? I'll tell who is caring for it later; at present I want to say something more about those potatoes, see p. 245 April GLEANINGS. For two full weeks I sold potatoes daily, without a bit of opposition from any body. Nobody else had succeeded in getting any *new* potatoes. As an experiment I raised the retail price to 40 cents for a half-peck basket. It seemed to make no difference. Every basket was snapped up almost before I got out of town. For the first time, our grocery has adopted the "spot cash" plan. They pay the farmer spot cash and he pays them cash. Now this suited me to

a dot. And I got so much money for my daily load of potatoes, it wore holes in my pockets, until I emptied the dimes and nickels into a little box we kept in the cupboard, (it isn't there *now* dear reader) and on leaving home we invested \$100 in Liberty bonds. From the one-half acre in our backyard garden we received over \$150.00 *spot cash*; and you, reader, can do the same, or a similar thing, if you set about it in the right way.

Let me go over it once more, briefly: You start your potatoes, cut to one eye, in a bed, in very rich soil, where they can be quickly protected if frost comes. When there is a bunch of green leaves, and a great bunch of bushy roots, plant them out as you do cabbage plants, and have *new potatoes* before any body else.

FIRST PRINCIPLES OF FARMING.

The above is the title of a pamphlet of 87 pages, by my "long-time friend" (author of our book on Tile Drainage), Dr. W. I. Chamberlain. I have gone over it with much pleasure, and pronounce it of great value to one who wants to learn farming. Prof. G. F. Wright, the great geologist, Oberlin, O., says the book "should be in the hands of every farmer in Ohio." I was so much pleased with the closing paragraph of the book that I give here the closing sentence from it: "For myself I can say that thru my life of nearly 80 years, chiefly as a farmer, and all of it among farmers, I have noticed that the farm children who have been trained to 'remember the Sabbath day,' attend church and attend Sabbath-school, and try to keep the Golden Rule, have grown up to be more successful and respected men and women and better and more helpful citizens than the farm children who have not been trained up to attend church, but have, like their parents, made the Sabbath a day for lounging or loafing or for hunting, fishing, base ball and the like. Such boys I have often seen 'go to the bad.'" Address Stockman-Farmer Publishing Co., Pittsburgh, Pa., or order from us. Price 25c.

REGARDING HOME PRODUCTION OF SUGAR BEET SYRUP.

The Michigan Agricultural College sends Gleanings the following word concerning a matter about which there is considerable inquiry just at present. "Last year we sent out 20 samples of sugar beet seeds to correspondents inquiring in regard to the home production of syrup. In no case was a successful report submitted. Several thought the method practical, but stated that their sugar beets did not ripen. If the syrup is carefully skimmed it is possible to make it palatable. The method outlined in Farmers' Bulletin 823, U. S. Dept. of Agriculture, is a laborious one and would require much fuel and boiling down of juice." Any of our readers interested would do well to write to Washington for Bulletin 823.

AROUND THE OFFICE

M.-A.-O.

Nearer to not survivin' than ever before. "Uncle Amos" is comin' home from Florida within a few days, too. He's a good enough man—about as good as I ever knew—but he ain't likely to be fawnin' on me much. Seems like I don't love nobody and nobody don't love me. So, if I don't meet you here no more, I hope to meet some of you very choicest spirits, who have fishin and truth-tellin' propensities, in the happy fishin' grounds later. I hope some more of you won't be there to trouble me no more, either, so I do.

Our Food Page—Continued from page 285.

bake about half an hour. It may be served hot or cold. Any other fruits may be substituted for the apricots and raisins. Serve with the juice of the apricots made into a sauce.

JOHNNYCAKE.

2 eggs well beaten	½ cup rye flour
3 cups sour milk	1 teaspoon salt
3 level teaspoons soda	2 tablespoons melted
3 cups cornmeal	shortening

Beat the eggs in the mixing bowl and add sour milk. Sift together the cornmeal, salt, rye flour, and soda, and add to eggs-and-milk mixture. Beat in the melted shortening and bake in shallow pans.

CORN RICE MUFFINS.

1 cup cornmeal	1 teaspoon salt
1 cup boiled rice	2 teaspoons baking powder
1 cup milk	der
1 tablespoon fat	2 eggs

Mix cornmeal, rice, milk, and melted shortening together; beat five minutes, add well-beaten egg yolks, beat two minutes and sift in the baking powder. Fold in the stiffly beaten whites of the eggs, and bake in hot well-oiled muffin pans.

BEAN PORRIDGE.

Cooked white beans	Beef broth
Cornmeal	Salt

Make a thin mush of the seasoned beef broth and meal; cook about two hours and

(Continued on page 314.)

PATENTS

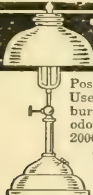
Practice in Patent Office and Courts
Patent Counsel of The A. I. Root Co.

Chas. J. Williamson, McLachlan Building,
WASHINGTON, D. C.

SWARMING CONTROLLED

No additional fixtures needed; unnecessary to clip queens; done solely by manipulation. Successfully used for eight years. For particulars address

Trimble & Thompson, Marion, Iowa.



The "BEST" LIGHT

Positively the cheapest and strongest light on earth. Used in every country on the globe. Makes and burns its own gas. Casts no shadows. Clean and odorless. Absolutely safe. Over 230 styles. 100 to 2000 Candle Power. Fully Guaranteed. Write for catalog. AGENTS WANTED EVERYWHERE.

THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

Mott's Northern-bred Italian Queens

are hardy, prolific, gentle, and hustlers, therefore resist well disease.

Untested, \$1.00 each; \$9.00 for 12

Select Tested, \$1.50 each.

Virgins, 50c each; or three for \$1.00.

Bees by pound.

Plans "How to Introduce Queens," and "Increase," 25c. List free.

E. E. Mott, Glenwood, Mich.

FLOUR IS HIGH

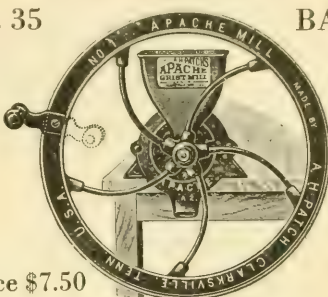
Why not live better and save money, too?
Grind your wheat into Best Whole Wheat or Graham Flour. Your doctor knows how healthy these are. Make the BEST Corn Meal, the old-fashioned sort you can't buy at any price nowadays.

Do all sorts of fine and coarse grinding with an

APACHE MILL

Wt. 35
lbs.

BALL
BEARING



Price \$7.50

This Mill Makes Best Corn Meal, Graham Flour, Rye Flour, Chops, Hominy, Cracks Peas, Grinds Coffee, Spices, etc. Perfect adjustment for coarse or fine work. Will send Mill prepaid by Express **\$7.50**
APACHE GRIST MILL—Largest capacity, fastest grinding, easiest turning handmill. Does more, lasts longer.

A. H. Patch, Inc., Clarksville, Tenn.
The Blackhawk Corn Sheller Inventor
Invented 1885

\$30,000 WORTH OF Bee Supplies



All boxed, ready to ship at once; 275,000 Hoffman frames, also Jumbo and Shallow frames of all kinds, 100 and 200 in a box. Big stock of Sections, and fine polished Dovetailed Hives and Supers. I can give you big bargains. Send for a new price-list. I can save you money.

Will Take Beeswax in Trade at Highest Market Price.

Charles Mondeng

146 Newton Ave., N. Minneapolis, Minn.

BEES Tested Italian queens . . . \$1.50 Silk faced veils80

We furnish a full colony of Italian bees in a new 8-frame chaff hive, complete with super, for \$15.00. Three-frame nucleus with Italian queen in May, \$5.50.

I.J.Stringham, Glen Cove, L.I., N.Y.

Queens Rhode Island Queens

Italian Northern Bred Queens. Very gentle and hardy. Great workers. Un- tested, \$1; 6 for \$5. Circular on applica- tion. Queens delivered after June 1.

O. E. TULIP, ARLINGTON, RHODE ISLAND, 56 Lawrence Street.

Forehand's Three Bands THE THRIFTY KIND

have been placed on the market for over a quarter of a century. We guar- antee that they will please you. One, \$1; 6, \$5; 12, \$9. Write for circular.

W. J. Forehand & Sons, Fort Deposit, Ala.

When Ordering Supplies

remember we carry a full stock and sell at the lowest catalog price. Two lines of railroad— Maine Central and Grank Trunk.

Prompt service and no trucking bills.

THE A. I. ROOT CO., Mechanic Falls, Maine.
J. B. MASON, Manager.

QUEENS

Quirin's Improved Superior Italian Bees and Queens. They are Northern Bred and Hardy. . 25 Years a Queen-breeder

PRICES	Before July 1st			After July 1st		
	1	6	12	1	6	12
Select untested....	1.50	8.00	15.00	1.00	5.50	10.00
Tested.....	2.00	10.00	18.00	1.50	8.00	14.00
Select tested.....	2.50	14.00	25.00	2.00	10.00	18.00
2-comb nuclei.....	4.00	22.00	42.00	3.50	18.00	35.00
3-comb nuclei.....	6.00	33.00	60.00	4.50	25.00	45.00
8-frame colonies.....	10.00	55.00		8.00	45.00	
10-frame colonies.....	12.00	68.00		10.00	55.00	
1-lb. pkg. bees.....	3.00	16.00		2.50	14.00	
2-lb. pkg. bees.....	5.00	28.00		4.50	25.00	

BREEDERS.—The cream selected from our entire stock of outyards; nothing better. These breeders, \$5.00 each.

Can furnish bees on Danzenbaker and L. or Hoffman frames.

Above price on bees by pound, nuclei, and colonies does not include queen. You are to select such queen as you wish with the bees, and add the price.

No bees by pound sent out till first of June. Breeders, select tested, and tested queens can be sent out as early as weather will permit.

Send for testimonials. Orders booked now.

Reference—any large supply dealer or any bank having Dunn's reference book.

H. G. Quirin, Bellevue, Ohio

Our Food Page—Continued from page 213.

then stir in about 2/3 of its bulk of the hot beans. Mix well, cook a few minutes, and serve hot with a little milk or butter.

Miss Abbie A. French.

BARLEY SPONGE CAKE.

4 eggs 1 tablespoon lemon juice
1 cup sugar 1½ teaspoon salt
1 1/3 cups barley flour

Measure the flour after once sifting, also sift the granulated sugar. Separate the whites and yolks of the eggs and beat the yolks until light and thick. Add the sugar and the lemon juice and fold in alternately the flour and the stiffly beaten egg whites, a little at a time.

HONEY BARLEY DROP CAKES.

½ cup melted fat 3 teaspoons baking powder
¾ cup honey ¼ teaspoon salt
1 egg ¾ cup chopped nuts
¼ cup milk 1 teaspoon vanilla or other flavor
2 cups barley flour

Cream the melted fat and honey together, beat in the egg, and add the milk. Sift the barley flour, baking powder, and salt together and add to the first mixture. Stir in the chopped nuts. Drop on well-oiled cooky sheet and bake in a moderate oven.

CODFISH CAKES.

1 cup salt codfish paprika
1 pint raw potatoes cut 1 tablespoon melted fat
in thick slices 1 egg

Shred the fish in small pieces, lay it on

(Continued on page 316.)

ROOT'S Bee Supplies

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and
Comb Foundation

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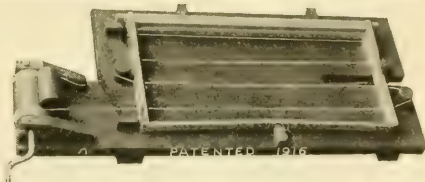
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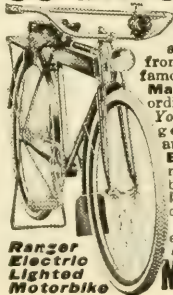
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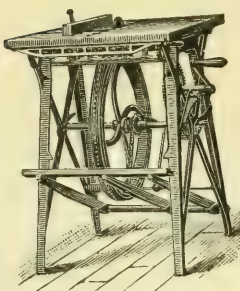
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ROCKFORD, ILLINOIS



Our Food Page—Continued from page 314.

the potatoes, and pour over boiling water to cover and cook until potatoes are done. Drain thoroly in a strainer, return to the kettle in which they were cooked, and mash, making sure there are no lumps of potato left. Add the melted fat, the well-beaten egg, and beat smooth. Take up by spoonfuls, place on well-oiled pan, sprinkle with paprika, and bake until brown.

HASHED BROWN POTATOES.

3 cups chopped cooked potatoes	1/2 onion sliced
1 teaspoon salt	1/3 cup milk
1/2 teaspoon pepper	2 tablespoons drippings

Combine the potatoes, seasonings, and milk; melt the drippings in frying pan and cook the onion until yellow and soft. Add the potato mixture and press down smoothly. Cook over a hot fire for a moment, and then slip a stove mat under and cook very slowly until brown on the bottom, about twenty minutes. Fold over like an omelet and serve on a hot platter garnished with parsley.

All measurements level.

BOOKS AND BULLETINS

MRS. ALLEN'S COOKBOOK.

Ida C. Bailey Allen, editor "Housewives' Forum" in *Pictorial Review*; formerly editor "Three Meals a Day" in *Good Housekeeping*; lecturer for Chautauqua and Westfield Domestic Science Schools. Small, Maynard & Co., Boston. Price, \$2.00 net.

This is not only a complete cookbook, but an all-around help for the housekeeper in her kitchen. In Part I Mrs. Allen treats of the chemistry of food and cookery, the diet for the different seasons, children's meals, the problem of the dinner pail, the art of combining foods, seasonings and on thru the equipment of the kitchen, short-cut preparation of meals, the serving of home and company meals and the chafing dish.

Part II gives methods of preparing and recipes for practically every thing one may wish to cook. There are good cooks who are not scientific; there are dietitians who understand the science of cooking, but are not especially good cooks. Mrs. Allen happily combines the sciences with the art, for good cooking is an art. One feels that she is a born cook who has availed herself of every help that science can give in the selection and preparation of foods for the family. And she has set it forth in a most attractive way. Her enthusiasm for her subject is apparent in every chapter of the book. The book is invaluable as a reference work, but a housekeeper who opens it will be sure to read on and on until she is seized with an uncontrollable desire to go to her kitchen and try some of the delectable dishes described. While not strictly a war cookbook, it is emphatically a thrift cookbook. One can find plenty of wheat substitute dishes, meat substitute dishes, and, best of all,

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attractive ways of using left-overs and portions of food commonly discarded.

Her talk on bread-making and flours is especially good and up to date, and she gives many recipes for using home-ground flours and meals in both yeast breads and quick breads.

Of especial interest to beekeepers is the casual way in which many of the recipes call for half a cup of honey here and one-fourth of a section of honey there. While there are not many honey recipes labeled as such, there are many containing honey.

The book is enriched by 45 illustrations of kitchen equipment, foods prepared according to the recipes, and daintily arranged trays and tables.

PRICES ADVANCED AGAIN.

Increasing costs of material and labor makes imperative a further readjustment of prices effective this date. This decision was reached too late to make an extended announcement of the various advances adopted. A circular is being prepared which will be mailed on application. The advances will average ten per cent; more on some items and none on others. No change on price of comb foundation. Copper smokers advanced 35c each. Honey extractors and most other metal goods 10 to 20 per cent advance.

THE A. I. ROOT CO., Medina, O.

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The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

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Untested Queens	\$1.15	\$ 6.35	\$11.50	\$ 43.70	\$ 85.00
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Get our prices on empty bee-cages. *Circular Free.*

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Untested.	\$1.00	\$ 5.00	\$ 9.00
Select Untested.	1.15	6.00	10.00
Tested.	1.50	8.00	17.00
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An Accounting of Expenditures of the First Red Cross War Fund

Every one of the twenty million and more Red Cross members is entitled to this statement. Your local Red Cross Chapter can give you further details.

First War Fund Appropriations up to March 1st, 1918

FOREIGN RELIEF:

Relief in France	\$30,936,103.04
Relief in Belgium	2,086,131.00
Relief in Russia	1,243,845.07
Relief in Roumania	2,676,368.76
Relief in Italy	3,588,826.00
Relief in Serbia	875,180.76
Relief in Great Britain...	1,885,750.75
Relief in other foreign countries	3,576,300.00
Relief for Prisoners, etc..	343,304.00
Equipment and expenses in U. S. of Personnel for Europe	113,800.00
Total Foreign Relief ...	\$47,325,609.38
Restricted as to use by Donor	2,520,409.57

UNITED STATES RELIEF:

U. S. Army Base Hospitals \$	54,000.00
U. S. Navy Base Hospitals	32,000.00
U. S. Medical and Hospi- tal Work	531,000.00
U. S. Sanitary Service...	403,000.00
U. S. Camp Service	6,451,150.86
U. S. Miscellaneous	1,118,748.41
Total U. S. Relief	\$ 8,589,899.27
Working capital for pur- chase of supplies for re- sale to Chapters or for shipment abroad	15,000,000.00
Working cash advances for France and United States	4,286,000.00
Total of War Fund Ap- propriations	\$77,721,918.22

At the close of the first year of the War the Red Cross goes to the public for the raising of the Second War Fund with a record of appropriations which warrants continued contributions to this great relief work. As an influential citizen of your community, join with your local Red Cross Chapter to make this campaign successful. Your Red Cross is the Army behind the Army. Give till your heart says stop.

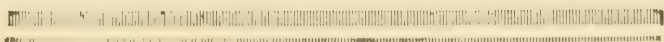
Second Red Cross War Fund Week May 20-27

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JUN 28 1918



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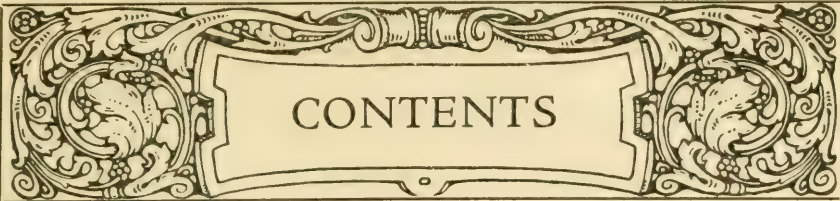
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We always buy Comb and Extracted Honey as well as Beeswax, so when you have the above to offer, write us and you will be well pleased.

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PRICE
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DADANT'S
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HONEY MARKETS

There has been little change in honey prices during the last month. The export factor of the market continues to make conditions abnormal and keeps prices at a high level, and will continue to do so as long as shipping space can be secured. That the Allies want honey and more honey is certain, but it is equally certain that with the rush of American troops and military supplies to the other side shipping space for honey is becoming more and more difficult to secure. How seriously the lack of shipping facilities may yet effect the demand for honey for export is purely problematical.

The crop outlook, big or little, is not the same determining factor as in normal times, for it is the abnormal export demand that is making the market. If this demand continues (contingent upon the continuance of the war and shipping facilities), there will be a market for every pound of honey that can be produced in the country, however large.

Judging by reports coming in from California, Texas, and Florida, the honey producer may calculate the prevailing price of honey, f. o. b. shipping point, for white extracted, at from 17 to 20 cents. Actual sales made by beekeepers in the early-producing regions confirms this price statement.

There is one regrettable feature about the present bountiful honey prices—they are not made by the home demand, and with the average American family honey is more a luxury today than ever. The high prices are not encouraging the "eat-honey" habit. This fact is most regrettable, considering the future and the great opportunity offered by the present nation-wide advertising of honey to popularize the use of it. There is perhaps no remedy for it, so long as the great export demand continues. Buyers will pay a price that home consumers can't afford, just so long as the foreign demand furnishes the big price, and just so long American honey will continue to be consumed abroad.

The Bureau of Markets, U. S. Dept. of Agriculture, has not issued a honey-market report during the past month, but below will be found the quotations of wholesalers from various large cities:

General Quotations of Wholesalers.

[These firms are asked to quote the wholesale prices they make to retailers. Accordingly, their prices must be figured at least one profit higher than the price paid the producer. The large dealers do not quote prices in print that they will pay futurally to producers.]

PORTLAND.—Reports from beemen in various locations indicate good prospects for honey. Present stocks well cleaned up. No special demand at this time. Comb honey is practically sold out completely. Comb honey, Fancy, per case, \$6.00 (very limited quantity). Extracted honey, white, per lb., 22c; light amber, in cans, 20c; amber, 18c.

Pacific Honey Co.

Portland, Ore., May 11.

CHICAGO.—Market is practically bare of all kinds of honey. We quote comb honey, extra fancy, per pound, 30c; fancy, 27c; No. 1, 25c; No. 2, 15 to 20c. Extracted honey, white, per lb., 18 to 20c; light amber, in cans, 15 to 18c; amber, 15 to 16c. Clean, average yellow beeswax, per lb., 40c.

R. A. Burnett & Co.

Chicago, Ill., May 16.

CLEVELAND.—Our market is all cleaned up on old honey (crop of 1917), and none of 1918 crop is yet in market; but there is a little Florida honey enroute. There is not much call for honey now, but a small quantity would no doubt bring a good price.

C. Chandler's Sons.

Cleveland, O., May 16.

SYRACUSE.—Nothing doing with us. There is not much demand at present. Once in a while comes a small order.

E. B. Ross.

Syracuse, N. Y., May 16.

BUFFALO.—No comb or extracted honey on this market. No quotations can be given.

Buffalo, N. Y., May 16. Gleason & Lansing.

HAMILTON.—There is nothing doing here in honey yet. No comb or extracted on the market.

F. W. Fearman Co.

Hamilton, Ont., May 16.

LIVERPOOL.—Since our last report the market has continued steady at about the prices we then quoted. Extracted honey is worth 41 to 43 cents per lb. wholesale. Large transactions have taken place both in Liverpool and London at the following prices: Jamaica, \$47.50 to \$48.75 per cwt. (112 lbs.); Argentine, \$48.50 to \$49.00 per cwt.; Cuban, \$47.25 to \$48.75 per cwt.; Hawaiian, \$46.25 to \$48.00 per cwt.; Honolulu, \$47.25 to \$51.25 per cwt. (in tins); Porto Rico, \$49.25 to \$50.00 per cwt.; Chilian, \$46.87 to \$47.50 per cwt. These are fabulous prices, and it is quite on the cards that the Food Controller will step in to regulate prices as he has done in the case of treacle and syrup. The result of that, of course, would be to stop the flow of honey to this market and the operation of importers would become limited. The possibility of this happening is already having an effect on buyers' feelings, as no one wants to import goods on which he may possibly incur a loss of 25 to 50 per cent. Beeswax.—There is no change in the market since our last quotation, except perhaps that it is lower on definite sales. The value of good quality is 48 to 50 cents per lb.

Taylor & Co.

Liverpool, England, May 3.

MEDINA.—The fact that most markets are bare of honey would lead us to expect active inquiry for prices. So few sales are made in a jobbing way that it is difficult to report prices for new honey. We have some arrivals of new crop honey from the South for which we have been paying 17½ and 18c in carload lots, for well ripened, thick, first quality white honey, and 14c and 16c for amber grades. No comb honey has been offered us yet. For California orange, purchase price has been 20c.

May 21, 1918.

The A. I. Root Co.

SKINNER ENGINE For SALE

At a bargain, nearly new 19x20 Skinner Simple right hand, center crank engine. This engine has been run only four years and it is in first class condition. At 130 pounds steam pressure develops 325 H. P., speed 200 revolutions per minute. The shaft is long enough to hold an alternator. Engine can be seen running at our plant any time up to July, 1918, when it will be replaced by a larger unit. Reason for selling, need more power. Not a worn-out outfit in any sense of the word, but a modern, efficient engine and a real bargain for the right party.

The A. I. Root Co. MEDINA, OHIO

Give the Boy a Chance!

He is just "itching" for that healthful, invigorating exercise that his young muscles will get when pushing a "Barker." Besides, the "Barker" will help and encourage him—**make garden work fun all summer long.** And with it he can do better work—and more of it—than ten men can do with hoes.

The BARKER Weeder, Mulcher, and Cultivator

Destroys the weeds and forms a moisture retaining mulch, **in one operation.** Eight steel blades revolve against a stationary steel knife which passes just under the surface. They uproot and chop the weeds and strip the soil from them. "Best Weed Killer Ever Used."

The combined action of blades and knife at the same time pulverizes the hardest crust and clods and spreads this necessary mulch evenly over the surface. Moisture is thus retained and held at the plant roots.

The "Barker" works up close to the plants. Cuts runners. Leaf guard makes its use practical throughout the season. It also has easily attached shovels for deeper cultivation, making it three garden tools in one. Ideal for the market garden and small fruit farm as well as for the ordinary kitchen garden.

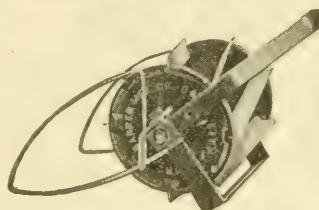
A ten-year-old boy can run a "Barker." He can do more and better work with it than two men with wheel hoes—and we can prove it!

Send for FREE Booklet

describing and illustrating the five different sizes, also containing helpful garden information. Show it to the boys and girls. Help them select the size best suited for **your garden.** We'll guarantee it to do the work or refund your money. Use the coupon, or better still, order the standard size, shown on this page, at once

Made only by the

BARKER MFG. CO.
Dept. 10, David City, Nebraska



**Model 8 1/2 D
Cultivating
Strip 8 1/2-in.
wide.
Price \$7.50.**

Thousands of "BARKERS" are in use. The following, from our many letters of commendation, shows what users think of them.

Barker Mfg. Co.,
David City, Neb.
Gentlemen:—

Ladysmith, Wis.
May 28, 1917.

I have had considerable experience with your Weeder, Mulcher, and Cultivator and believe it to be one of the best implements on the market for garden use.

Yours very truly,

G. M. Householder.

Agricultural Extension Service State of Wisconsin.

Barker Mfg. Co., Dept. 10, David City, Neb.
Gentlemen:—

Send me, postpaid, your FREE Booklet and Factory-to-User Offer.

Name

Postoffice

State

Superior Foundation

"Best by Test." Superior quality creates tremendous demand—over two carloads shipped during May. Have you ordered?

American Can Co. Honey Cans

Over four carloads now on hand. Other cars ordered.

Dovetailed Beehives

Our stock is complete. Prompt shipments guaranteed.

Honey Extractors

Plenty on hand—more enroute.

Sections and Shipping Cases

"Everything in Bee Supplies."

We recommend early ordering to offset slow transportation.

Yours for Prompt Service

Superior Honey Company, Ogden, Utah

The Domestic Beekeeper at Half Price

There are many readers of Gleanings who have never taken the **Domestic Beekeeper**, consequently, do not know what we are doing for our subscribers. Here is our special offer: The price of the **Domestic Beekeeper** is \$1.00 per year. Send us 50c for the last half of 1918 and we will mail you the back numbers for the first half of 1918 so you will receive a full year for the 50c, just half price. This offer is good for the first 200 subscriptions received, as we have only 200 full sets to offer.

Buy your 60-lb. cans thru us, only 98c per case of two, from Detroit, Michigan. Beekeepers' supplies bought for our subscribers at a considerable discount from catalog price.

Have your foundation made from your own wax; our proposition is a good one. Any make of foundation or supplies you prefer, shipped direct from the factory to you without the middleman's profit.

Remember that 50c pays for the **Domestic Beekeeper** for all of 1918, also, our large buying experience is at your service. You will need the **Domestic Beekeeper** to keep in touch with the minimum price fixing committee, appointed by the Chicago North-Western Association, of which the Editor is one, to be in shape to intelligently place a price on your 1918 crop of honey. This committee saved producers something like \$500,000.00 on their 1917 crop and expect to do even better this year. An enterprising honey producer cannot afford to be without the **Domestic Beekeeper**, at this especial time. The **Domestic Beekeeper** (successor to the Review) is the producers' own journal, having no interests excepting the producer. Address with your 50c.

The Domestic Beekeeper, Northstar, Mich.

QUEENS QUEENS QUEENS

Three-banded and Golden Italians. The best of either. They are hustlers—gentle to handle, cap their honey white, are very resistant to European foul brood. We have added B. M. Caraway's queen-rearing outfit to ours; also have with us one of his assistants, so we hope to fill all orders promptly. Satisfaction and safe arrival guaranteed. Reference: The Guaranty State Bank, Robstown, Texas, or The City Nat. Bank, Corpus Christi, Texas.

	1	6	12	50	100
Untested Queens	\$1.15	\$ 6.35	\$11.50	\$13.70	\$ 85.00
Select Tested	2.50	11.50	20.70	74.75	138.00

Get our prices on empty bee-cages. *Circular Free.*

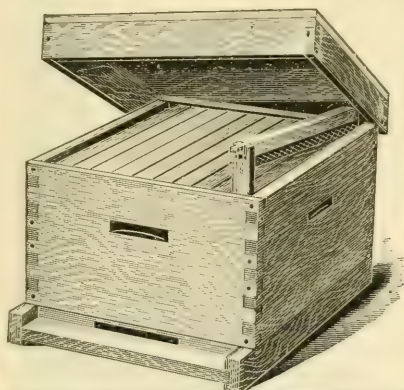
Satisfaction and safe arrival guaranteed *within six days of Calallen, Tex.*

NUECES VALLEY APIARIES, Calallen, Texas, will hereafter be known as

Nueces County Apiaries Calallen, Texas

E. B. AULT, Proprietor

More Profit in Bees . . .



If you get your supplies early enough to have every thing ready for the honey-flow. Get your supplies now. Catalog FREE.



KRETCHMER MFG. CO.

Department G

301 11th Avenue, Council Bluffs, Iowa

Full Values in "FALCON" Beekeepers' Supplies

For the last forty years during our manufacture of "FALCON" supplies it has been our endeavor to place upon the market the best possible line of supplies. And we pride ourselves in having accomplished this. "FALCON" supplies have not only been recognized as the best in this country, but also a leader in other countries. Nothing expresses the superiority of the "FALCON" ware better than the many kind and pleasing words we receive from our satisfied customers, and the ever-increasing demand for "FALCON" supplies.

The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid

Dealers Everywhere

"Simplified Beekeeping," postpaid

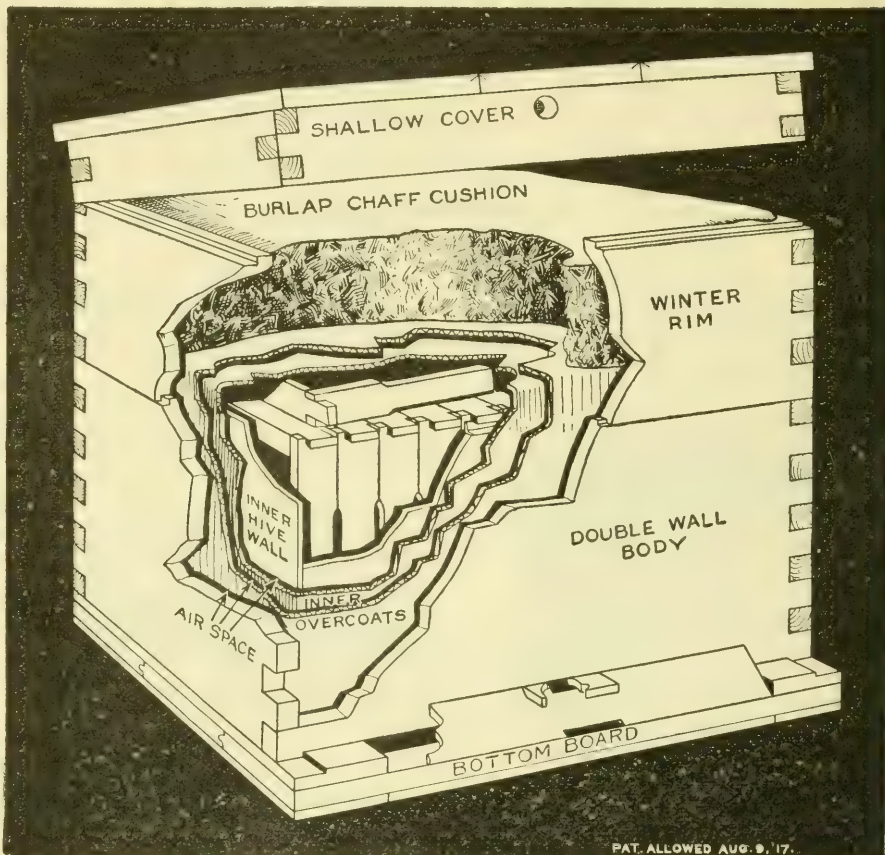
W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from.

Winter Problem Solved

By Woodman's Improved Protection Hive

"The Hive With an Inner Overcoat" ¹⁰⁰ PER CENT PERFECT PROTECTION BY TESTS, WINTERS OF 1916-17-18.



PAT. ALLOWED AUG. 9, '17.

THE INNER OVERCOAT DID IT. Without any special preparation we have wintered bees in these hives without loss. It is a joy to see the condition they are in, when compared with other styles or hives and wintering methods. The INNER OVERCOAT is telescoped down over the brood nest, in between the outer and inner hive walls, when preparing them for winter. In the spring it is removed and stored away in the K. D. flat. Not more than two minutes are required to pack or unpack a hive by this method. The INNER OVERCOAT affords more protection than several inches of ordinary packing material. Send for a special circular showing 10 large illustrations.

TIN HONEY PACKAGES. Sixty-Pound Cans, in cases or in bulk are being sold by us at prices a considerable below general market prices. Send us an estimate of your requirements and let us quote prices.

Friction-Top Pails, any size furnished and in quantities as you may desire. Send us a list of your requirements and let us quote prices as we can save you money. The tin can factories are rushed with orders, the tin plate situation is serious and transportation slow, so it will be wise to place your orders early.

A. G. Woodman Co., Grand Rapids, Michigan

The Honey Season Now Here

Have you your supplies on hand? If so you are lucky, for we are having our troubles with the express companies and railroads. They are all balled up. If you have been unable to order your goods early send in orders now and we will ship promptly, but it is up to the express companies and railroads to make quick delivery. So far, orders by mail have been much the quickest. Better send in orders now if you think you are going to need supplies.

F. A. Salisbury, Syracuse, N. Y.
1631 West Genesee St.

Make This a Lewis Year

While you are starting the year's work---getting your bees ready for business---taking stock of supplies on hand, and speculating as to what the season's outcome will be---

Make This Resolution

That you will use LEWIS BEEWARE this year—because it means success insurance to you—because it means beehives and parts made of the best material by skillful workmen — because it means goods accurately and systematically packed — because it means sections made of bright lumber, highly polished, accurately dovetailed, and scientifically grooved.

Help Your Bees Sting the Kaiser

Order your supplies early, and order standard goods in order to save time and enable us, as manufacturers, to accomplish the most in the shortest possible time. Now of all times the beekeeper should not put off until tomorrow what he can do today. You owe it to your country and to yourself to prepare at once for the gathering of the 1918 crop.

Lewis Hives are Built Like Furniture
Lewis Sections --- the kind that do not break in Folding



You will find LEWIS BEEWARE almost at your own door — thirty distributing houses in the United States and foreign countries. If you have not one of our catalogs, send for copy at once.

G. B. Lewis Company
Exclusive Manufacturers Lewis Beeware
Watertown, Wis., U.S.A.

GLEANINGS IN BEE CULTURE

JUNE, 1918

EDITORIAL

FREQUENT MENTION has been made in Gleanings in Bee Culture of the Extension



**Extension
Work in
Beekeeping.**

Work in Beekeeping which is being done by the Bureau of Entomology, but perhaps some of

our readers do not know that this work is part of the greatest educational institution in the United States. The Bureau of Entomology has sent out a dozen men thruout the country to teach better beekeeping, and the teachings of these men is the most practical beekeeping taught today. However, to send out a dozen men on so large a subject would be a small affair, if the men went alone and on their own efforts entirely. They actually do go as part of the work in agricultural extension, and, because of the co-operation which they receive the results of their efforts are multiplied many fold.

For a number of years extension work was carried on in the South from funds contributed by the General Educational Board and a great establishment for the work was built up under the management of Dr. Seaman Knapp. Finally Congress saw the desirability of such work as an enterprise of the Federal Government, and the Smith-Lever Bill was introduced and became law. Under this law each State is allotted a certain sum annually, the amount varying with the rural population and also with the amount which each state is ready to contribute to the work. In this way the funds are greatly increased and enormous sums are spent every year for this purpose.

All of our readers are familiar with the system of County Agents and at the beginning of the war there were about 1,000 such agents thruout the country. As a war measure, Congress appropriated additional funds for increasing this staff of experts rapidly and there are now such County Agents in almost all the agricultural counties in the country. This work in each State is administered by a State Director of Extension, who represents both the Federal Department of Agriculture and the State Agricultural College. To this official the County Agents are directly responsible. No institution of such size has ever before existed for the teaching of better methods in agriculture, and, if any of our readers have failed to take advantage of the things which are offered

by this system, we advise them to reform in this regard at once. Of course the individual County Agents are not all as well equipped as we may wish, and in some cases perhaps mistakes have been made, but there can be no doubt that the work of these men has added greatly to the agricultural wealth of the country.

The work on beekeeping, supported by the Bureau of Entomology, is part of this larger work. The extension men go to a State and are then under the administration of the Director of Extension. He arranges with the County Agents for the necessary meetings, schedules the trips for the beemen and sees that their time is well occupied. The County Agents in turn arrange for all local meetings, notify the beekeepers, and give the meetings the necessary publicity. It is therefore plain that the time of the beemen is put to the best possible advantage and they are able to reach a much larger number of persons than would be the case if they had to arrange all the details of meetings. The County Agents are of course skilled in arranging for such work and in practically all cases are able to work up better meetings than the beekeepers themselves could do.

We have thus a dozen, and we hope that the number will be rapidly increased, men who are giving their entire time to the up-building of the beekeeping industry. They are assisting beekeepers not only by the giving of advice of the most practical kind, but they are assisting the County Agents in organizing the beekeepers into local associations so that they can do together what they could not do individually.

This is part of the effort that the Government is making for the advancement of beekeeping, and most of it is brought about as a war measure. There is need for more honey. However, it does not take a prophet to see that this work will bear lasting results, that the benefit will not cease when peace comes. Then, too, it is to be hoped that the good work in beekeeping will go right on after the war is over, and we think it will, for the beekeepers of the country will realize the benefits which they have received from the work and will insist that the work be supported liberally in the future.

If the Government will teach beekeepers the best methods of beekeeping, will advertise their product, will aid them in the dozens

of ways which we have experienced this year, then there is nothing for the beekeeper to do but to dig in to make the biggest crop of honey that he has ever had.

We suggest to our readers that they take steps to have one of these extension men come to their communities. This can be arranged through your County Agent. There are only a dozen of them and they cannot be in many places at one time, but by taking the right steps in time something can be done for your community. You will be surprised at the results. The men who are doing this work are well equipped, surprisingly well. We have had opportunity to meet some of them and we can commend them to our readers.

A meeting with one of these men present offers a good opportunity to organize a county bee club. Perhaps you do not see that you need one, but you do. Clubs can do for the members what the members individually cannot do for themselves. Think it over.



THE HONEY PRODUCERS of western United States are showing the way in many



**Big Market-
ing Plans
in the West.**

things to honey producers everywhere. Just at this time, they are busy perfecting the greatest honey producers' organization on earth for marketing their honey. The men engaged in this big task are imbued with the proper spirit of co-operation, they have business vision, and they have big-business capacity. They purpose to stand together in their common cause, and to end the day when the Western honey producer stands alone in single feebleness.

We can give our readers no better idea of this big movement than to reprint here the notice sent out to beekeepers on Apr. 26, from Denver, by Stuart L. Sweet, Field Agent in Marketing of the Bureau of Markets, U. S. Dept. of Agriculture. This notice reads as follows:

The Colorado Office of Markets, a branch of the United States Bureau of Markets, and representing the Extension Division of the Colorado Agricultural College, called a meeting last August to discuss the possibility of organizing the honey producers in the Inter-Mountain districts. The territory embraced nine States producing alfalfa white honey. A tentative set of by-laws was submitted at this meeting by Mr. C. E. Bassett, in charge of the Co-operative Organization Projects of the United States Bureau of Markets. Mr. Bassett has made a life study of co-operative work, and will submit the final plan of the by-laws for this Association early in May. Those by-laws will be based upon those used successfully by other co-operative organizations in the United States.

The short crop in the alfalfa white district last season, with the attendant high prices, eliminated the marketing difficulties which have prevailed in past seasons. This year all indications point to the largest honey crop this district has ever produced, and it is felt by many beekeepers that it will be distinctly to the interests of all concerned to have perfected an organization which will be able to assist in

the marketing and distribution of the 1918 honey crop.

It is requested that you read over the form attached below and if you are interested in joining this organization please fill out the blank, as outlined. It will be appreciated if you will call the attention of your neighbor honey producers to this, and ask them to sign. There is enclosed a franked and self-addressed envelope, requiring no postage, for the return of this form to the Colorado Office of Markets, not later than May 10.

Thanking you for your co-operation in this work, I remain,

STUART L. SWEET,

Field Agent in Marketing.

INTER-MOUNTAIN HONEY PRODUCERS' ASSOCIATION
MEMBERSHIP AGREEMENT.

We, the undersigned, do hereby agree to become members of the Inter-mountain Honey Producers' Association and to market through the Association the honey from the number of colonies set opposite our names and to pay a membership fee of 10 cents per colony, provided that in no case shall such membership fee be less than \$10. The agreement shall not be binding upon the subscriber hereto until the honey of at least 30,000 colonies has been pledged. [There follow blank lines for the names, addresses and number of colonies that the beekeepers signing may have.]

We wish this formative association every success in bettering the market conditions of the Western beekeepers.



EVERY BEEKEEPER knows that nectar secretion is influenced by the character of



**Importance
of
Soil Surveys.**

the soil. In establishing out-apiaries and even the home yard, it is worth while to get information on this point. This is especially true where the nectar comes from a leguminous plant, such as the clovers, when lime is of great importance. Of course, those of our readers who engage in farming also need such information in crop growing.

The Federal Department of Agriculture publishes a series of soil surveys. In time, probably, these surveys will cover the whole country, except the parts where agriculture cannot be practiced. A list of the surveys which have already been made may be obtained by writing to the Bureau of Soils, Department of Agriculture, Washington, D. C. This list explains how the surveys may be obtained.

Beekeepers are just beginning to find out how handy it is to have a Department of Agriculture. Gleanings has referred many times to the value of the daily weather maps. Then there is a Bureau of Chemistry which keeps its eyes open for honey adulteration, and a Bureau of Markets which furnishes the semi-monthly market reports which are reprinted in Gleanings. Of course, our readers know that there is a beekeeping office in the Bureau of Entomology. It would be an interesting thing to know something of all the offices which affect the beekeeper. Perhaps Gleanings can dig all this up some day.

In the meantime, has your region had a soil survey? Have you a copy?

BEEKEEPERS in and around Denver have suffered for years from what they were pleased to call smelter-smoke poisoning. This trouble starts generally the latter part



Smelter Poison in Colorado.

of April or May and continues thru June. Often it lasts later than this. The effects of the poisoning remain with the colony from year to year. There are, as yet, no definite data as to whether smelter smoke is responsible for this, but it is known that the trouble is present around Denver and Pueblo. Some beekeepers say that the trouble is caused by the city smoke. Colonies will be greatly depleted or destroyed entirely in a few days. The loss takes place generally right after a rainy season. The honey stored in these colonies is badly granulated, but often there is much thin and nearly sour honey on top of the granulated cells. Combs of granulated honey look wet and greasy. A number of colonies, that a correspondent of Gleanings examined recently, were greatly depleted in number—in fact, they were nothing but weak nuclei. These colonies had not been in the poisoned district since last year, so that their weakened condition was caused by the honey that they had consumed from the stores in the hive. So experienced a beekeeper as Wesley Foster of Boulder, Col., gives it as his opinion that the unripe condition of this honey may be explained by the fact that the bees do not succeed in thoroly ripening it, because they become sickened by the poison and go out and die before completing their job. Mr. Foster adds that at present the beekeepers are moving their bees out of this district where the smelter poison seems to be the most serious. The area affected is favorable for honey production, so that most of the beekeepers move the colonies back about the time the alfalfa begins to bloom; but whether this procedure is profitable is being questioned by a number of beekeepers who have been practicing it.



THE MONTHLY crop report for May of the U. S. Dept. of Agriculture contains a



Official Report on Conditions.

"Honeybee Report," date of May 1, which is summarized as follows:

The losses of colonies of bees during the past winter have been, for the United States as a whole, 18.7 per cent of the total number; in other words, almost one out of every five colonies has perished. As the reports to the Bureau of Crop Estimates are in the main from the better class of beekeepers, it is to be feared that the wastage has been even greater. Under the present circumstances, this loss assumes a serious aspect. The Nation can ill spare the 20 to 30 million pounds of honey which past experience permits us to assume as the possible production of these lost colonies.

Roughly, a third of these losses are ascribed to freezing and another third to starvation, and it is sad to reflect that both of these causes might in

large measure have been overcome by their proprietors and protectors. Sugar and labor shortage are partial, but only partial, excuses, as is also the unusual winter, which came early, shortening the flow of nectar from the autumn flowers, and persisted with unexampled severity without the customary brief relaxations of ordinary years. Lost or failing queens and small colonies resulting from brood diseases or late swarming, are the principal remaining causes of loss.

The losses were most severe in the North Central and Northeastern States (Massachusetts, Pennsylvania and Maryland having 40 per cent loss of colonies or more,) and extended as far southward as North Carolina, Tennessee, Missouri, and Kansas ranging in some States as high as 41 per cent and in only a few cases falling below 15 per cent. The losses in the South and West have been less than usual, with the exception of Oklahoma and California, and notably Texas, where drought of two years' duration in important honey-producing sections has resulted in 24 per cent of loss.

The number of working colonies remaining on May 1 is estimated at 88.7 per cent of the number on May 1, 1917. Material increases last year partly offset the heavy losses. Increases are shown over last year's numbers in most of the Southern and Western States.

The condition of colonies was 86.4 per cent of a normal on May 1 compared with 91.1 per cent last year, and an average of 94.2 per cent, reflecting the effect upon the surviving colonies of the severe winter. The colonies appear to be building up rapidly, however. Colonies are reported in excellent condition in most southern States, omitting Texas, and are above normal in several of the western group, altho in California they are in only a trifle better than last year's poor condition, and still 10 per cent below the average.

The condition of honey plants is reported at 86.7 per cent, which is considerably better than the 82.3 per cent reported last spring, but distinctly below the average of 92.6 per cent. The lowest conditions are in Wisconsin, Iowa, and South Dakota, due to winterkilling of clover, and in Texas and Oklahoma, resulting from droughts.

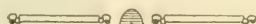


ON ACCOUNT of the winter losses, as mentioned elsewhere, difficulty has been experienced in buying bees.

The Difficulty in Buying Bees.

Those who have bees are unwilling to sell them. With the present high prices of honey and the possibility of securing from 100 to 150 pounds of extracted honey, no man who has a colony of bees can afford to sell them at prices even double what they have ordinarily been held at, providing, of course, that he is a good beekeeper. If he is not, then he would better sell.

The lesson that comes to us is that some (the weaker) colonies should be held for increase, as something must be done to replace losses that occurred last winter.



Beekeepers can secure a very interesting article by Dr. E. F. Phillips on "A Wasted Sugar Supply" by writing the Division of Publications, Washington, D. C., and asking for "Separate No. 747." It is taken from the 1917 Agricultural yearbook.

JUNE is the time of year when the queen in the regions of the United States holds the center of the bee stage—perhaps she always holds it, but it is during this month that the test of her quality and worth is proved. So Gleanings is here going to print some recent views of a number of well known beekeepers concerning the queen and her activities as well as the beekeepers' treatment and handling of the queen.

A Breeding Queen, and How to be Sure of Having a Good One.

BY J. E. CRANE.

In recent years I have noticed a tendency to advertise breeding queens or "breeders" as they are often called. The price is usually five or ten times the price of ordinary queens. It is rarely, indeed, that I have seen the good qualities of these high-priced queens enumerated or described. You pay your five or ten dollars for a "breeder" and get what the dealer chooses to send you. This business has many times reminded me of a trick we used to play as children: "Open your mouth and shut your eyes, I will give you something to make you wise." Now I have opened my check book and invested in some of these "breeders" and been made wise. Not that I have never received any choice queens—I have—but I have also found that the chances of getting all I desired, are not very large.

I have wished that the queen-breeder would tell us what we may expect from his "breeder." If I go into a store to buy a suit of clothes, the obliging proprietor is ready to enlighten me. I may find a suit for \$15 that fits me very well, and perhaps I am ready to purchase when he shows me a suit with a price of \$20 or \$25. I enquire wherein the difference consists and he explains that the higher-priced suit is of finer material, will never fade, and contains no cotton. He will point out the better quality of linings, the more nearly perfect fit, and the color most becoming to a man of my years. I buy the higher-priced

DISCUSSION of QUEEN PROBLEMS

How to be Sure of a Good Queen; Rearing One's Own Queens; Best and Cheapest Way to Requeen; Notes on Controlled Mating

if it does not prove so, I can return it to the dealer. But when I buy a "breeder," it is like buying the proverbial "pig in a poke"—a very uncertain commodity.

THE QUALITIES A "BREEDER" SHOULD HAVE.

Have the workers of this queen proved themselves of unusual vigor? Are they longer lived than average workers? Has the queen a pedigree of many generations of good honey-gathering stocks? Is she of pure Italian blood? Do her workers build their surplus combs white and free from propolis or bits of dark wax carried up from the brood-chamber? Is she, as well as her queen ancestors, prolific. Or does her excellence consist simply in her beauty? Does the breeder warrant such queens to be of superior quality? Not that I am aware of. If a queen proves quite worthless or even a damage to your yard, you can hardly expect the dealer to replace her, for it can not be shown that she is not a "breeder."

Until breeders of queens can show that their "breeders" possess quality, as well as price, would it not be well to buy the average queens and run your chance of finding a breeder among them? A queen can hardly be fully tested in much less than a year. When we can buy ten or a dozen queens for

what we would have to pay for one breeder, it would seem good policy to buy the larger number of cheaper queens and run our chance of finding among them a good queen to breed from.

Still I believe it pays to buy queens occasionally from standard breeders, for if they are no better, it is at least an advantage to introduce fresh blood. Besides, it gives us an opportunity to compare our stock with that of those who have been engaged for many years in breeding queens and presumably have done their best to improve their stock.

HOW TO SELECT A GOOD BREEDING QUEEN.

We may often find



It's the queen he's looking for. She interests everybody.

queens of superior quality among our own bees, if we are looking for them. When visiting an old beekeeper in a near-by county, he told me of one colony he had that had done remarkably well, far in advance of the others in his yard. He lives alone and has only his bees to care for, and also a little garden where strawberries crimson from June till November. I asked if he could spare me a queen from his best colony. I fancied a shade of sadness came over his genial face as he told me that he had none to spare, for he loved his bees almost as tho they were his own children. For several years I have been breeding from such a queen and daughters with very satisfactory results. Indeed, the strain seems as good or better than anything I can find. But it is not every day or year that I find such a queen and I must be content with a slower advance.

This last year, in order that I might be guided in selecting a good breeding queen, I marked all my supers as they went onto my hives and then as I cleaned the sections I set down the number of those hives that stored above the average and whose combs were white and free of propolis and well attached to the sections. Then in the spring when the soft breezes blow and dandelions are paving the roadsides with gold while the trees are vocal with bird songs, I can go out into my yard and, by means of my list, select a breeder. This first number may be 26. This is found to be a grade or hybrid. I do not care for it. Next is 33. As I look, the bees begin to get nervous and run off the comb. This does not suit me. The next is at number 52. It seems rather backward and I am inclined to think that it lacks vigor. Next I open 63 but before I am thru I find them quite too ready to take an insult, and, if I get away without a sting, I shall be fortunate indeed. And now another. Here I note the combs are well filled with brood, the bees of fair color and quiet on the combs, and the queen does not even stop her egg-laying at the unusual disturbance of opening the hive. On looking up her pedigree I find she comes thru a long line of superior queens, and she is my choice. She is not for sale for she is worth more than her weight in gold.

Middlebury, Vt.

[We have often suggested that the beekeeper who desires a breeder can sometimes secure better results by taking the money that would buy one breeder and purchase untested Italian queens. If those queens come from a select mother, that has been tested out in all-around qualities, there is a strong possibility that one of those daughters may come very nearly equaling the performance of the mother. And in the lot there may be one or two others that may develop breeders.

However, if the queen-breeder is conscientious, he will supply only a breeding queen of known merit and when he doesn't have her, say so. There is no justice or

right in charging \$10 or \$15 for a breeding queen, if he doesn't have that kind of value in stock. Sometimes the demand for a high-priced queen is so great a queen-breeder is tempted to pick out something that he thinks will come up to standard out of his young queens, without so advising his customer. The only fair way in such cases is to write the customer that his breeding stock is exhausted, and then say the only thing he can do is to pick out a fine select tested from his best breeder and charge no more than such select tested queen would ordinarily bring in the open market. A breeding queen should not be less than six months old and it would be better if she were a year. The honey-gathering qualities of her bees, their gentleness and good wintering qualities should all be factors in determining her value. Moreover, she should be a queen that will duplicate her own qualities in her daughters as far as possible. The bees of a breeder may do ever so well, but all her queens be indifferent and poor. This does not often happen, but we have heard good queen-breeders say such and such a queen would be a good breeder, if only her daughters would be uniform and go part way in equaling the performance of the mother.—Editor.]

* * *

Does It Pay the Beekeeper to Rear His Own Queens.

BY F. L. BARBER.

Arising in the mind of every professional beekeeper is the question, "Will it pay me to rear my own queens?" It is true that very good untested queens may be purchased for about \$1.00; but, tho this cost seems small, if a large apiary is to be requeneed, the amount reaches a considerable size, and, if this extra expense can be saved, the total receipts of each colony will be correspondingly increased with comparatively little labor.

Of course it will be necessary for the average beekeeper to purchase his breeding stock, as few are so situated that they can profitably rear their own. Therefore in most cases the selection of fine strains must be left to the professional queen-breeder. In some apiaries it is the rule to choose for the breeder the queen from the colony with the best honey record; but this policy, tho apparently good, leads to some curious errors. Unless it is certain that the queen is of pure stock or of a fixed cross, she should not be used, for it is a well known fact that when a first cross is used as a breeder the resulting offspring are most variable in character.

NECESSITY FOR A PLENTY OF QUEENS.

The beekeeper should remember that it is desirable to have extra queens on hand when the number of colonies is to be increased by division or by any method of artificial swarm-building. If a queen is provided as soon as the increase is made, the new colony will gain about three weeks in brood-production over a colony that has to rear

its own queens. Since it is a well established fact that queens lay more eggs during the first year than in any other, it is evident that frequent requeening pays well for the extra labor and that it is really necessary in order to secure the best results in honey-production. The best honey-producers hold that it does not pay to keep queens more than two years old. There is, however, one exception to this rule. This is in queen-rearing apiaries where it is desirable to have a large number of choice drones always on hand. Since old queens lay a much larger number of drone eggs, it is often well on this account to keep a few old queens of select stock.

QUEEN-REARING NOT DIFFICULT.

It is true that queen-rearing can not be carried on without careful attention; but the methods are not, as many believe, so complicated as to make it impossible for the honey-producer to afford the time. In rearing queens by any artificial method, it is first necessary to study the circumstances and conditions under which queens are reared naturally, namely, under the swarming impulse. From this study we learn that the hive must be well filled with bees and there must be a bountiful supply of honey and pollen. The amount of brood supplied should be limited so as to concentrate the working force of the colony on the building of queen-cells. Here is the outline of a plan I have used with good results.

From a strong vigorous colony, remove the queen and most of the brood. Then take 20 wooden cell-cups, each of which has a wooden base with a depression into which has been previously placed a molded wax cell. Into these place a little royal jelly. Next take a frame of larvæ from the best breeding queen and with a grafting needle carefully lift out larvæ about 24 hours old. Place these into the prepared cell-cups and give them to the queenless colony and, if no honey is coming in, feed them until the cells are capped. Or, if desired, after about 24 hours these cells may be given to a colony made queenless but not broodless, and another batch of cells given to the first colony. For when cells have been started by a broodless and queenless colony, they will usually be finished just as well by a colony with brood but queenless.

It is better and more in harmony with nature not to allow the queens to hatch in cages, for when first hatched they need the attention of the nurse bees as they are not fully developed for several days. It is well known that the drones contribute as much as the queens to the character of the workers. Therefore in order to have a large per cent of the queens mated to select stock, it is well to rear a large number of drones in one or more colonies whose queens produce worker progeny especially noted for their good qualities. If desired, we may help in the drone-rearing by giving these colonies some drone foundation.

All phases of beekeeping are interesting,

but to me queen-rearing is particularly so. How fascinating it is to see the cells accepted and watch them grow large, white, and beautiful; to see the big fat larva curled up on a lump of royal jelly much more than it can use; and then, after the cell has been sealed and given to a nucleus, to watch for the virgin to hatch. Finally the cell is found open at the end and we know the queen is there. Still we want a look at her and so we find her. How large, long, and beautiful she is! In a few days we look to see if she is laying. There she is with a more matronly and dignified appearance. We know she has mated and will be laying in a few hours. The next day when we look again, there are eggs, which proves that she is now fitted to begin her life work. We cage and then introduce her into the home or colony where she is to reign supreme; and we hope and trust that her reign will be one of peace and prosperity.

Lowville, N. Y.

* * *

The Best and Cheapest Way to Requeen.

BY R. F. HOLTERMANN.

This interesting subject was discussed in an address given by A. D. Hall at the convention held last fall in Watertown, N. Y. He used to requeen during the honey flow. His experience was, that, as soon as honey began to come in freely, the bees began to build queen-cells. If he wanted a queen from the colony, after seven or eight days he would go thru the colony, kill the queen, and remove every cell except one of the best. In that way he overcame the swarming impulse and saved time and manipulation. He said he had frequently been asked what he did with all the bees in the hive if they did not swarm. His answer was that he often made a nucleus from it, and increased and made up losses in that way. If queen-cells were started for swarming, and he wished to keep the queen, he removed her with a comb of brood and bees and added some more bees. A beekeeper must, however, adjust himself to conditions. Bees are sometimes held back from swarming by rainy weather. In such a case the bees might not follow the usual rule of casting the second swarm the eighth day after the issue of the first; but the swarm might come out, even three days after the first. He would not advise killing the queen of a colony unless the cells are well advanced—almost ready to swarm. In that way the best cells are obtained.

During the time that the colony is queenless, and as the young bees emerge from the cells, leaving them empty and not again occupied by eggs and larvæ, the bees will clog the brood-chamber with honey; but after the young queen emerges from the queen-cell left in the hive the bees will move the honey into the super, thus preparing the brood-chamber for the eggs which in time the young queen is expected to deposit.

C. O. Enders of Oswegatchie, N. Y., stated that he often killed the old queen and put

in a new cell protected by a cell-protector and almost ready to hatch. He tried to time this operation for the middle of the flow.

This drew out a very profitable discussion upon the value of queens. George B. Howe of Black River, N. Y., said that one fruitful cause of swarming was poor queens. If the queen is two or three years old, the colony is almost always bound to swarm. A good queen is valuable; and a good queen can be raised only during a moderate honey flow.

Charles E. Stewart, one of the efficient inspectors of New York State, made the statement that the best time to requeen is in the fall of the year. A good queen should be reared late enough to introduce by Sept. 15 or later. She will then lay very little that season, and be in prime condition to lay abundantly the following spring, thus helping to build up the colony.

Brantford, Ont., Canada.

[The plan of requeening by A. D. Hardy here spoken of is very similar to the one advocated about 17 years ago by N. D. West of Middleburgh, N. Y. His plan was not so much for stopping swarming, if we remember correctly, as it was to get good queens from choice cells. The principal objection to taking swarming cells is the danger of getting queens with the swarming impulse. However, it is generally admitted that the swarming-impulse cells furnish better queens than those from cells under the supersedure or queenless impulse. The scheme of preventing swarms is a good one and may be used to advantage by a good many beekeepers where swarming in the early part of the season is a source of a good deal of annoyance.—Editor.]

* * *

Some Notes on Controlled Mating of Queen-Bees.

BY ARTHUR C. MILLER.

Queens and drones fly normally in a nine-foot cube lined with white cloth. In a room or cage covered with one thickness of white cotton cloth they evidently can see thru, for they attempt to go thru the walls. But with two layers of cloth one inch apart, that trouble disappears, altho they do attempt to go higher than nine feet.

The presence of workers in the cage is a direct interference with the queens and drones. George B. Howe of Black River, N. Y., reported that in two different years and on two occasions he observed drones swoop down upon and seize heavily laden home-bound workers. To the human ear the hum of a heavily laden worker is the same tone as that of a virgin queen.

Drones probably follow and find the virgin queens by the sound of the latter's wings. Virgins with slightly clipped wings to prevent long flights have never been known to mate.

Young queens fly high, pretty much out of the sound of the apiary. In place of a permanently built cage, Fred B. Simpson of

Cuba, N. Y., tried a tube of cheese-cloth hoisted to the top of a tall pole, but the tube was of too small diameter and was of only one layer of cloth. A cotton-cloth cage is superior to netting, either of cotton or wire; it is also stronger and cheaper, but the walls, as above stated, must be double and separated by a small space.

Both queens and drones must be well fed and in a warm hive, so they fly readily at the customary hours. Even in the white-cloth room, with four identical small hives, one against each side, the young queens find no trouble in returning each to her own hive.

SUGGESTIONS AS TO A MATING CAGE.

To lessen the expense and avoid trouble from storms, a rectangular double tube of white cotton cloth, hoisted to such height as may be necessary, probably not over 50 feet, would be superior to a cage with rigid and permanent framework. (A place between tall buildings would do, if they were not so near together as to restrict the light.) The top frame, to which the cloth walls and "roof" are attached, would have to be fairly firm. Other rectangular frames, inserted at intervals to keep walls apart and "tube" in shape, could be made of bamboo poles. Such a "room" could be hoisted for a few hours on suitable days and lowered at other times. The bottom of such a tube would need to be anchored securely to the ground. Some method should be used to keep workers from entering the tube, and the tube should be out of sound of the apiary.

Drones and queens must have access to nurse-bees, probably thru wire cloth, and should also have free access to pollen and honey in the combs. The writer did some experimenting along this line too, but could not complete it.

It seemed to him preferable to have the queen in a compartment on a comb with emerging bees, said compartment being in the middle of a strong colony. He was also of the opinion that it was best to move such a colony from its stand the midday before the queen was to be allowed to fly, so that all the field bees and most of the youngsters old enough for a play-spell would be out of the way and not be humming outside of the mating cage.

Probably as good results (perhaps better) might be secured by shutting in the bees of the colony and letting only the queen fly from her compartment and the drones from theirs in another hive. Until we know more about the subject, it seems best to fly queens from a different hive than the drones.

The writer is of the opinion that relatively few drones, say 12 to 20, will be better for cage work than more. Select vigorous mature ones by catching some as they return from flying.

Providence, R. I.

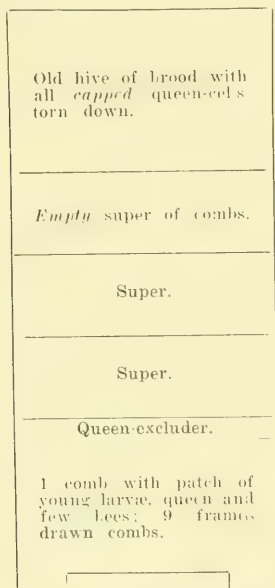
[These interesting "notes" were sent by Mr. Miller to Gleanings, not for publication, but at our request he has permitted their publication as "notes" and "notes only."—Editor.]

OF all the different phases of beekeeping nothing has had more discussion and experimentation than swarm control. It therefore occurred to

me that to study the bee literature of the past 30 years, carefully picking out, correlating, and comparing the most successful plans of swarm control might perhaps be instructive and helpful. It is quite possible that I was slightly prejudiced at the start. At any rate, the result of this study is a firm conviction that the plan we have been using for the past five years is as good a plan as has yet been advanced for the prevention or control of swarming in the production of extracted honey in out-yards.

The Best Plan for Out-yards.

This plan is: As soon as danger of swarming arises, every seven or eight days careful-



Best extracted-honey plan of swarm prevention or control in out-yards to be applied after advanced queen-cells appear. Above lower story there should be at least three shallow or two deep supers. For swarm prevention, after 8 days remove queen-cells in top story and leave brood to hatch or give to weak colonies. For swarm control after 8 days move top story to new stand, contract entrance and leave queen-cell to hatch or introduce new queen.

ly examine the colonies, keeping them always supplied with plenty of room, and destroying whatever queen-cells are found, providing

BEST SWARM CONTROL PLAN

A Review and Study of the Plans of Thirty Years. Is There Such a Thing as "the Demaree Plan?"

By Iona Fowls

a few bees, and a few young larvæ. (If no combs are available, most of the frames may contain foundation; but there should always be at least three drawn combs, and a whole set, if possible.) Above this place the queen-excluder; then two or three empty supers; and at the very top the hive of brood, tearing down only the capped queen-cells. At the end of seven or eight days, if no increase is desired, tear down all queen-cells again. If increase is wanted, simply place the upper story on a new stand and leave them to raise their own queen, or introduce a good queen or choice cell in a protector. It is not even necessary to remove any queen-cells; for when the new queen hatches, either she or the bees will attend to that. If one desires no increase, then the queen-cells may be destroyed and the brood distributed to other colonies or left to increase the original colony. That is the entire plan, and it has for years been used by many of the best beekeepers.

Good Points in Above Plan.

There are points of unusual merit in this method. The conditions very closely resemble those of a natural swarm, the bees of the old colony being mostly young and hatching bees; and, being so far removed from the new swarm below, they seem to consider themselves queenless, and consequently direct all their energies to the completion of splendid-looking cells. In the lower story there are no nurse bees nor cell-builders—only field bees; and since this new colony is supplied with such an abundance of room, both for the queen and for the storing of honey, they entirely give up all ideas of swarming. Moreover, this plan keeps the working force together for a longer time; enables the bees in the upper story to raise fine cells under the swarming impulse, keeps the brood very warm until it is all sealed and the greatest danger of chilling is over, and makes it possible to leave an apiary entirely alone for a week at a time during the swarming season.

Haziness in Regard to Demaree Plan.

This plan is one often referred to as a modification of the Demaree plan; and if every plan in which brood is raised to an upper story has the right to this name, then almost every plan except swarming, dividing, or dequeening should be so designated. Right in this connection we should like to ask whether Dr. Miller, E. R. Root, or any one else really knows what the Demaree plan is.

We noticed in Gleanings, page 854, 1917,

they contain only eggs or young larvæ. When more advanced cells are found, place on the old stand a hive of drawn combs, one of which contains the queen,

that Dr. Miller alludes to the fact that E. R. Root puts all the sealed or hatching brood above, and the unsealed brood below with the queen; and then he continues, "Please tell us why that was better than putting sealed brood below and unsealed brood brood above; also why it was better to put up only part of the brood instead of the regular Demaree plan of putting up all the brood, with the possible exception of one."

Now, it just happens that of the two suggestions in Dr. Miller's last sentence, the first is not Demaree's and the second is a combination of the plans Demaree gave in 1892 and 1894, while E. R. Root's plan was the one given by Demaree in 1895. However, Mr. Root was apparently quite unconscious of the fact, for in a footnote he straightway proceeded to put up a very good defense in which he said: "We do not claim that this procedure is better than the Demaree plan."

Sealed Brood Should be Above.

This last quotation of Dr. Miller's raises the question whether the sealed brood should be put above or below. We feel convinced that it, together with all but a small patch of the unsealed, should be put above. This leaves the upper and lower colonies in the same condition as the new and old colonies of a natural swarm.

Demaree's Plan Underwent Changes.

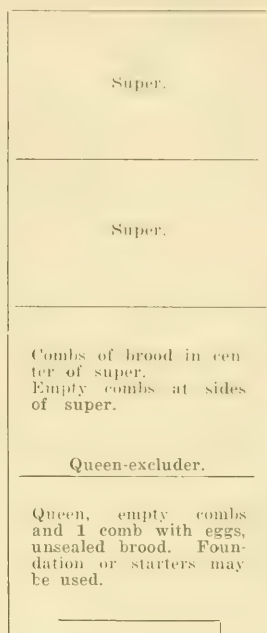
During a period of about ten years his plan underwent certain changes. Just what his finally perfected plan was we cannot say, unless it was the one given in 1895.

In the American Bee Journal, page 619, 1884, in an article entitled "Controlling Increase," his idea was to make the colony queenless for a time. When the colony first showed signs of swarming he placed on the old stand a new hive of empty combs, one containing some larvæ just hatched. On this was placed whatever supers the colony chanced to have. He then placed the old hive at right angles to the new one, leaving in it the queen and a few bees, most of the bees having been shaken in front of the new hive. At the end of five days he gradually turned the old hive, bringing the entrances beside each other, and then at the end of ten days turned it back again, thus turning more of the field bees into the new hive. At this time he also removed the queen-cells and gave young larvæ. When all danger of swarming was over he tiered the old hive above the new one.

Demaree's Plan of 1892.

In 1892 (American Bee Journal, page 545) Demaree discarded this plan, saying that "any system that requires a divided condition of the colony, using two or more hives, is not worthy of a thought." He then proceeded to give a full discussion of his plan, concerning which we especially call attention to the fact that the method was applied at the commencement of swarming, but usually before any cells had appeared, instead of after the cells were far advanced

and sometimes even capped, as in the plan we advocate; that the purpose was swarm prevention only, instead of either prevention or control—and that the brood was, therefore, never removed from the hive;



Demaree's Plan of 1892, for prevention of increase. Applied to strongest colonies at commencement of swarming, but usually before appearance of any queen-cells. If applied after swarm issues, no brood or eggs are left in brood-nest.

and that the surplus supers appear to have been placed above the super of brood instead of between the brood and lower story. Following is a statement of his 1892 plan:

"When your apiary is as large as you want it, what would you give to be able, by a simple, practical manipulation at the beginning of the swarming season, to hold all your colonies in full strength of working and breeding force steadily thru the entire honey harvest? You can do it, beyond a doubt, by practicing my new system of preventing swarming; and if you have the ingenuity to apply proper management to suit the *new condition*, your surplus yield will be larger than by any other method made known to the public.

"I have practiced the new system largely for the past two seasons, and my surplus yield was never so large, tho it is well known that the past two seasons were not above the average as honey-yielding seasons.

"As I have already intimated, my plan of preventing swarming, and entirely preventing increase, is accomplished by one single manipulation right at the commencement of swarming. Only one hive and its outfit is used for each colony. Any system that requires a divided condition of the colony, using two or more hives, is not worthy of a thought.

"In my practice I begin with the strongest colonies and transfer the combs containing brood from the brood-chamber to an upper story above the

queen-excluder. One comb containing some unsealed brood and eggs is left in the brood-chamber as a start for the queen. I fill out the brood-chamber with empty combs, as I have a full outfit for my apiary. But full frames of foundation, or even starters, may be used in the absence of drawn combs.

"When the manipulation is completed, the colony has all its brood with the queen, only its condition is altered. The queen has a new brood-nest below the excluder, while the combs of brood are in the center of the super, with the sides filled out with empty combs above the queen-excluder.

"In 21 days all the brood will be hatched out above the excluder, and the bees will begin to hatch in the queen's chamber below the excluder; so a continuous succession of young bees is well sustained.

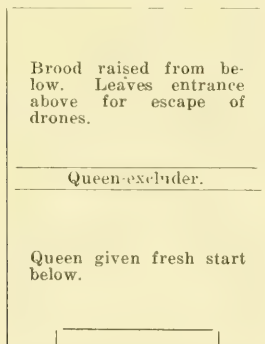
"If my object is to take the honey with the extractor, I tier up with a surplus of extracting combs as fast as the large colony needs the room to store surplus. Usually the combs above the excluder will be filled with honey by the time all the bees are hatched out, and no system is as sure to give one set of combs full of honey for the extractor in the very poorest seasons; and if the season is propitious the yield will be enormous under proper management.

"The great economy of this system is, all the colonies will produce as nearly alike as can well be—a condition of things that never occurs in any apiary swayed by the swarming impulse. If my object is fancy comb honey I tier the section-cases on the super that contains the brood, and push the bees to start all the combs they can.

"The system described above works perfectly if applied immediately after a swarm issues. The only difference in the manipulation in this case is that no brood or eggs is left in the brood-nest where the swarm is hived back."

Demaree's Plan of 1894.

In the next allusion we find to this method (American Bee Journal, page 633, 1895). Demaree speaks of leaving an entrance



Demaree's Plan of 1894, for swarm prevention. All brood raised.

above; and instead of leaving below one comb with eggs and young larvæ, he simply says he raised the brood above.

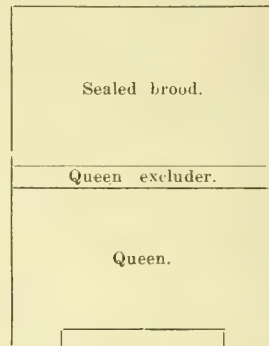
"In practicing my plan to prevent swarming, which consists in the simple manipulation of raising the brood above the zinc excluder and starting the queen afresh below, I make a hole in the upper story for the drones to escape from the upper story, as they cannot pass out at the entrance because the excluder is between."

Demaree's Plan of 1895.

The last description we find given by Demaree was in an issue of the following year

(American Bee Journal, page 633, 1895). There we note that when he wanted increase he allowed natural swarming. When he desired no increase he raised all the the sealed brood. He stated the plan as follows:

"I want a system of management that will keep the full working-force of the colony together during the entire honey flow unless I want to increase my colonies by taking a prime swarm from each colony. If I want no increase I prevent swarming by raising all the sealed brood above the queen excluder and confine the queen below the excluder. If I



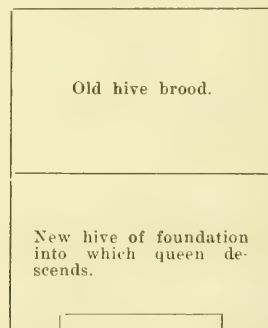
Demaree's Plan of 1895. For no increase, he used above plan. For increase, allowed to swarm, shaking some bees from old colony into new.

want the prime swarm, I let them come, hive them on the old stand, remove the parent colony to a new location, after shaking enough bees from the combs to prevent after-swarms."

Demaree's four plans may be summarized as follows: The colony was made queenless and nearly broodless for ten days (1884). The queen and one frame of eggs and larvæ were left below; above this were the excluder, hive of brood, and supers (1892). The brood was raised above an excluder and the queen left below (1894). All the sealed brood was raised (1895).

Langstroth and Others Raised Brood Before Demaree.

Does it seem to any one that any of these plans demands that we give Demaree the



Langstroth's Plan of 1865 for prevention of increase.

credit for all plans involving the raising of brood? If so, then we refer such a one to "Langstroth on the Honeybee," 1865, page

153, where it will be found that Langstroth suggested the raising of brood for the prevention of swarming 27 years before Demaree. He says, under "Artificial Increase":

"If, however, the new hive is directly below that in which the swarm was first lodged, and the connections are suitable, she will be almost certain to descend and lay her eggs in the new combs, as soon as they are begun by the bees. The upper hive being now almost entirely abandoned by her, the bees fill the cells with honey as fast as the brood is hatched, their instinct impelling them to keep their stores of honey, if possible, above the breeding-cells. As long as bees have an abundance of room below their main hive they very seldom swarm."

Also in the British Bee Journal, page 13, 1884, Samuel Simmins gives this plan:

"My method of 'swarming without increase' is as follows: When a colony working in sections is on the point of swarming I remove the whole of the brood-frames and shake off every bee into the hive again, and give them nine frames of *foundation only*, replace the sections, which are at once proceeded with, and the colony is as contented as a new swarm. The removed brood-combs are given

Extracting super in which frames of brood may be substituted for frames of honey, that are removed for extracting.

Extracting super in which some of the frames of brood may be substituted for frames of honey.

Bees and queen shaken onto these 9 frames of foundation only.

Plan of Samuel Simmins of 1884, for prevention of increase. May place brood above or give to other colonies.

to other colonies that may need them, or are inserted where frames are removed for extracting."

[In this quotation, "sections" evidently means supers." Some old-time writers used "section" in the sense of super.]

Does it not look as if Demaree's plan was as much a modification of preceding plans as all the recent brood-rearing plans are modifications of Demaree's?

Recent Swarm Prevention or Control by Raising Brood.

Since the time of Demaree there have been a great many beekeepers who, either for the prevention or control of swarming, put brood above. We have now before us a long list of those who, during recent years, have tried this plan with slight variations; but

lack of space forbids our pointing out all the differences and similarities.

Alexander's Plan.

E. W. Alexander had a practical plan for one having a large number of colonies all in one yard; but for those with several out-

Old hive of brood, no queen-cells present.

Queen-excluder.

Empty combs or foundation; 1 comb of brood and queen.

Alexander's Plan of 1906, requires three or four manipulations. Applied when about populous enough to swarm. After five days, if queen-cells are present, destroy and separate at once. If no queen-cells, leave 10 or 11 days and then put old hive on new stand. In 24 hours give ripe cell, virgin or laying queen.

yards his plan demands too close attention. It should be noted that the plan is applied preferably before queen-cells are started, that the brood is placed immediately above the lower story, and the whole plan requires three or four manipulations.

Alexander's plan appeared in April, 1906, and stated briefly was as follows: When the colony is about populous enough to swarm, over a hive of empty combs or foundation containing the queen and a frame of brood place the queen-excluder and the queenless colony. (So far the plan is the same as Demaree's.) Leave five days and then, if there are queen-cells, destroy them, unless you wish to breed from them, and separate at once. If no queen-cells are started, leave 10 or 11 days and then put the old hive on the new stand. In 24 hours give a ripe queen-cell, virgin or laying queen.

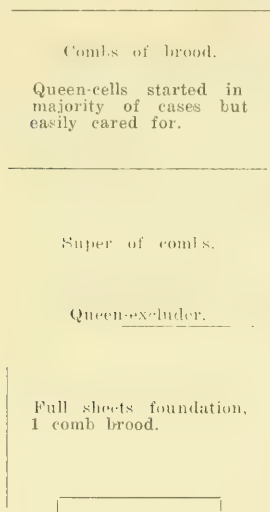
Byers Plan of 1914.

The first who came near giving the plan described at the beginning of this article was J. L. Byer who stated (page 337, Gleanings for 1914) the following method:

"Take away the major part of the brood *before* the swarming fever shows, substituting full sheets of foundation in place of combs removed. If the colony is strong I recommend taking all but one comb of brood away; and if there are no signs of swarming at the time of operation, these brood-combs can be placed above the excluder in the super. If the flow is on, as it should be when doing work of this kind, I place a super of comb next to the excluder, and then another story with the brood in on top of that. With this brood so far away from the old brood-nest, queen-cells will

be started in the majority of cases; but they can be cured for easily later on."

We consider this system a very good one for those who desire no increase and have such large swarms that there is no danger of chilling the brood when applying the



J. L. Byer's Plan of 1914, for swarm prevention. Applied before swarming fever shows.

plan so early. It will readily be seen that this plan is to be applied before any cells are started, and is for swarm prevention alone, thus offering no provision for those desiring increase and also a crop of honey. On the other hand, it should be noted that a super of combs intervenes between the upper and lower hives. Right here is where it seems to me the plan goes away ahead

of those preceding, for it places the new and old swarms further apart, renders the condition of the upper one more nearly that of a queenless swarm, and makes it less likely that any cell-builders from the hive of brood will enter the lower story and begin cells there. When using this plan before queen-cells appear, probably one super intervening would be all that is necessary; but if applied at a later stage, when advanced queen-cells were present, of course more supers would be required.

Many beekeepers who do not care to raise so much of the brood before any signs of swarming appear, place from one to three frames of brood above, allowing the queen access to both stories; and then a few days after the opening of the season place the queen in the first story below a queen-excluder. We have also done this, and then later applied the plan we first described if occasion arose.

The Plan We Have Used for Five Years.

In Gleanings, page 574, 1915, is a full discussion of the plan which we like best, and which is given in outline in the second paragraph of this article. It is for either swarm prevention or control, and is to be applied after the queen-cells are started; or even after they are sealed, if desired. It is quite possible that this form of plan appeared in print at some earlier date; but if so, we have not happened to run across it. As previously intimated, the plan is a gradual development, and therefore many people deserve the credit for its final form. It is doubtful if any one person originated it; but certain it is that the credit should not be given to Demaree, since his plan consisted merely in raising the brood, and Langstroth also did that more than fifty years ago.



A View of the Home Yard of S. A. Niver, Greenfield, Cal. This Apiary is Composed of Artificial Increase.



CONVERSATIONS with DOOLITTLE

The Desirability of Breeding from Queens Having a Pedigree

"I see that a Michigan dealer in small fruit plants claims that he has made great improvement in strawberries by selecting the best and strongest specimens, both in plant and berries of certain kinds, till he has some of these kinds brought to perfection in every respect, or very nearly so. I know that animal life does not stand on the same plane as does vegetable life, but why cannot beekeepers work along the same line in the improvement of bees, working through the drones and queens?"

Our questioner has touched on something about which I have been frequently asked by those who kept bees and also horses, cows, and poultry, they claiming that the latter three had been much improved thru a pedigreed course for a term of years, while bees were very little better than when the first queens were brought to this country from Italy. It is a common saying that "like produces like," and it is true in a general way. It is also true that in the breeding of animals, and especially so with bees, that the parent transmits not only its own qualities, but that of its ancestors, it may be for many generations. A lecturer at a teachers' institute was asked when a child's education should begin, and made answer, "Begin with his grandfather." I am told that breeders of horses admit an animal to be thorobred, that has been crossed for eight or ten generations.

There is no question about the importance of selecting our breeding queens from our most honey-productive colonies; and not only that, but it is even more important, if we would secure the best results, that also the ancestors of our breeders should have been from extra-producing colonies, and that, for many generations. And this ancestral selection is of more importance when it comes to the drone, as nearly all agree that the father has more to do with pedigreed results than does the mother. And right here is where our improvement in bees has been so slow. The experience of the writer has been that, even with the cost and labor of getting and keeping hand-picked drones, no such advance can be or has been made as can be done, where we have as complete control of the father, as with the other stock usually kept by the agriculturist.

There are two ways of securing a pedigreed stock, and the one so far touched upon is the way mostly used by our breeders of queen bees. The other way, and the one I have worked hard upon, is that of eliminating the undesirable qualities found in my

most productive colonies. My desire has been not only to build up all desirable traits, but to weed out all that did not make for success. As vindictive disposition in bees mars much of the pleasure of apiculture, and also hinders work in the apiary, I have superseded the queens of such colonies having a vindictive disposition, supplanting them with others of the same productive stock, reared from the best tempered colonies.

In this selection I have also been careful about other undesirable traits, among which was the tendency to build an excessive amount of brace- and burr-combs. These are a nuisance, even with extracted honey, and with comb honey brace-combs are the means of spoiling the nice capping of other sections beside the one from which they are built out. And bees which have burr-combs "on the brain," concentrate much of their efforts in plastering different places with wax, instead of expanding in securing the largest yield of honey, to say nothing of the objectionable trait, necessitating frequent scraping of the top-bars and super bottoms.

Next came the weeding out of the queens giving short-lived bees, and breeding from such as would carry bees, emerging in August, over to the next June; also such as would carry over from May to the close of the buckwheat flow in September. This has always seemed a more profitable field than working for more prolific queens, which generally gave bees requiring two generations to be reared and fed during the main flows of nectar.

Drones should be as closely looked after as possible, as they have no sire. Most breeders of queens have been looking at what they consider "the business end," the workers. But these have a sire, and partake of characteristics, from both sides; consequently, a pedigree based on the workers may take in almost everything where there are a mixed multitude of bees in box hives and apiaries, and where the beekeepers pay no attention to the matter of drones on all sides of our pedigreed stock, for a distance of five miles. And at even a greater distance than five miles, a few of our choice queens may go astray in their mating. As hinted at before, about our only way to even partially overcome this drone matter, is to keep the drones from our improved thorobred stock till after the drones, not desired in our own apiary and surrounding country, have been killed off in September. Unless such a course is pursued our work for improved stock will tend toward a general mixing instead of developing desirable characteristics.

If I have made myself "plain" in this matter, it will be seen that it is very important to use good queens from our most

FROM THE FIELD OF EXPERIENCE

productive colonies to breed from for both drones and queens. Not only that, but it is even more important, if we would secure the best results, that the ancestors of our breeding queens should have been from extra-producing colonies also, and that, for many generations. Not only the queens, but the drones, if possible, should likewise come from such stock. Our chances of success are much greater by the use of queens with a pedigree than with a chance-queen of even unusual excellence.

G. M. Doolittle.

Borodino, N. Y.



IMBEDDING WIRES

How Electricity Can be Effectively and Inexpensively Used

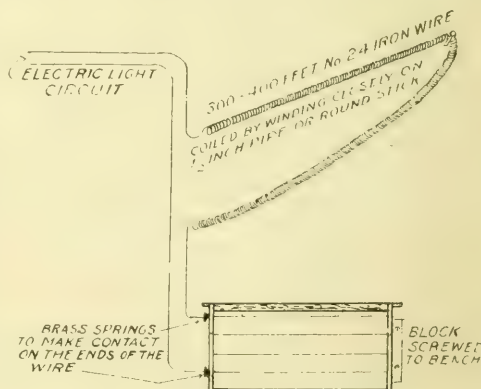
After all is said and done, the most satisfactory method of imbedding wires in comb foundation is by means of electricity; and if one has access to an electric-light circuit, as so many beekeepers now have, the best way is to imbed all four wires at once by attaching the current to the tacks on the outside of one of the end-bars of the frames, around which the ends of the wires are wrapped, the current then flowing thru all the wires. Dry batteries might be used for this purpose, but it would take eight to a dozen batteries to heat all four wires quickly, and even then it would be a rather hard strain on the batteries. Even for heating one wire at a time it takes four cells, and fresh cells at that. The trouble with dry batteries for imbedding is that they must be fresh to be efficient, and after a little of this kind of work they are no longer fresh.

Obviously with the straight electric-light current, if that were attempted, the wires would be heated redhot in an instant, or, what is more likely, a fuse somewhere on the circuit would be blown out. The current must first be run thru a "resistance" to reduce it, just as steam when run thru a steam engine is exhausted, and of much lower pressure thereafter. If one has an electric flatiron to put on the circuit, that furnishes about the right amount of resistance. In that event the two wires that go to the switch which turns the flatiron on and off, have just about the right amount of current to do the imbedding nicely. If there is no switch, the flatiron may be hooked in on one of the wires, the current going first thru the flatiron before it goes thru the wires in the frames.

With no electrically heated flatiron available, a resistance coil can be made in a few minutes' time. First, get about 400 feet of No. 24 iron wire. The exact amount can not be given, for the wire varies slightly in size; furthermore, different operators may prefer different currents to work with. The best plan is to get 400 feet of the wire and

then not use quite all of it, if more heat is desired. In order to have the wire in convenient form to handle, wind it on a long iron rod, or pipe, the outside diameter of which is not over $\frac{3}{4}$ of an inch. Twist the wire around one end of the pipe tightly, so it will not slip; then have some one else turn the pipe slowly, while you wind it on evenly and tightly, with no space between the coils. When it is all wound on, let the wire loosen up, cut the end that was first twisted on and slide the whole thing off the pipe. Hang the coils on nails in the wall or ceiling, being careful that the different lengths of the wire do not touch each other. The electricity after passing thru all these coils of wire will be "tame" enough to handle by any one. These directions are for the standard voltage, 110, found almost universally. It makes no difference whether it is direct current or alternating—one works as well as the other.

To do the imbedding, take a board wider than the frame and near one end screw two



Electrical Imbedding Device.

pieces of sheet brass, which will stick up about an inch. These are to be spaced the right distance apart, so that if the end-bar of the frame is pushed up against the piece of brass, one tack, around which the end of the wire is wrapped, will touch one brass spring and the other tack the other. For best results there should be a switch for turning the current on and off.

The sheet of foundation should be on top of the wires, instead of the wires on top of the foundation. As soon as the current is turned on with the left hand, a light wooden roller, that will just fit inside the frame, should be rapidly rolled across the wax, pressing it down over the heated wires. If one desires to deflect the upper two wires out of line, that is, bend them down slightly, two headless nails can be driven into the board at the right point, and the upper two wires drawn down around them before the current is turned on, or before the sheet of



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wax is laid on. These nails should not stick up any higher than necessary to catch the wires over them. A very slight notch can be filed, almost at the top of the nails on the under side, to prevent the wire from slipping off easily.

Imbedding all four wires by means of electricity, while not particularly easy for the first few frames, is far more rapid than any other method and capable of the very finest work. A good operator that has imbedded a few hundred wires can do the work so nicely that it is almost impossible to detect which side of the foundation the wire went in, the wire itself showing no more on one side than on the other. H. H. Root.

Medina, O.



HOW HE WON A PRIZE CONTEST

Yet the Prize Comb Honey Did Not Pay as Well as Extracted

During the season of 1917 a contest to show the possibility of Wisconsin beekeeping was carried out under the direction of the State Beekeepers' Association. Certain rules and restrictions were laid down, such as single-colony production, defined as the production of bees from one queen. The

contest closed Sept. 3, in time to remove the product and get the result to the State Fair for exhibition.

Those knowing the Wisconsin honey season for 1917 know that what was a great result for 1917 would have been very small in comparison to the possibilities of our white-clover season of 1913.

And now as to the secret of how I obtained my 97 finished sections from one colony. I know there are beekeepers who have "secrets" and who guard them very carefully; but this spirit is not common among the members of our fraternity. The bright, active, pushing beekeeper will find out; and the more experienced beekeeper is usually glad to show him the way. It seems to me that the secret to successful beekeeping is this: "To do the right thing at just the right time."

Now, this sounds simple, and the selection of a strong colony is simple; and to recount my operations is simple; but the doing of them is another matter. Especially is the production of fine comb honey a fine art—that is, to produce the beautiful, white, well-filled No. 1 sections, free from travel-stain, and, as far as possible, free from bee glue and stains.

I resorted to no spring feeding or spread-



Apiary of W. H. Moe, Prize Winner, at Woodford, Wis.

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ing of brood. For the first super I selected nice partly drawn-out sections (bait sections) of the previous fall. Of four queens received the year before from the University queen-breeder, Mr. Aeppler, one was especially good. In the first super for this colony I placed large foundation starters, but not drawn out. This colony fell short in the quantity production, and also had many poorly finished sections in the third and fourth supers; and, perhaps, room was given a little too freely, as I desired all the honey I could get.

My prize-winning colony had a young queen of the preceding fall; and by May the hive was full of working bees. They swarmed early, and I cut out the cells and returned the colony to the same hive, enlarging the entrance by raising the hive-body from the bottom-board, and, as fast as needed, giving more section supers of full sheets of foundation. On Sept. 3 the colony had 97 pounds in 96 sections. All were well filled, fancy and No. 1 section, and the exhibit at the State Fair made a fine showing, as I think all who saw it will testify.

Another colony was selected for the best extracted production. My best single-colony production was 157 pounds net. This, at 15 cents a pound, brought \$23.55. The comb honey sold at 21 cents in case lots. Ninety-seven pounds at 21 cents brought \$20.37. At present it is difficult to know honey prices. It is, apparently, anything for which you choose to hold up your neighbors. At times "frenzied finance" is a sordid affair. The figures show a balance of \$3.18 in favor of the extracted-honey colony. Such a statement and such a showing, I think, would in general have been true for last year. Of course I am aware that higher prices on extracted honey are now quoted; also that my figures for extracted-honey production are not as high as those of the winner in the contest. Therefore from the above considerations, together with the fact that comb-honey production requires constant care and watchfulness, it would seem that comb-honey production is doomed. The above would also prove the wisdom of the United States Government when it advises beekeepers to produce extracted honey.

Woodford, Wis.

H. H. Moe.

MOVING TO PASTURES NEW

How to Take Advantage of a Poor Season with a Light Truck

I lost a crop of honey last year thru lack of foresight, in-sight or hind-sight — one may take one's choice after knowing the circumstances. In 1916 we had a big clover flow; the pastures were white with clover nearly all the growing season. That fall everything looked as if the clover must re-

peat in 1917. The action of that repeater must have got jammed, as it most flatly refused to repeat in 1917.

Nothing happened to suit a beekeeper. We had a cold and, I believe, the driest winter in our history. The clover winterkilled. There was no snow to protect it and it failed to show up in the spring. I kept looking for it, feeling sure it would come but that it was late for some reason. My experience had not at that time included winterkilled white clover. After I was convinced the winter had killed it, I expected it to come from seed later in the summer. The summer was very dry until late in August and, if it did come, it came when I was not looking.

Then I pinned my hopes on sweet clover, and the sweet clover made good all right. But it came after a starvation period for the bees and it required all the flow to build the bees up to a storing point. Then after the August rains we had a light heart's-ease flow which made just a little surplus in the stronger colonies and put all in good shape for winter. Now here is where I was shy of some of the above "sights."

If I could have convinced myself that there would have been no white clover, I might have fed the bees for the sweet-clover flow which I was sure was coming. I am sure now that if I had fed a few sacks of sugar at the right time, I could have had those bees ready and have gotten at least a fair crop of sweet-clover and heart's-ease honey. I can't see now why I couldn't see it then, but the remorseful fact remains that I didn't.

Then just a few miles north and a few miles south, there was clover in plenty in places where it was protected, on creek bottoms and in low-land pastures. Now I wish some one would tell me why I did not think to move my bees to some of those places. I was just too bullheaded to give up the white clover in my own particular locality till it was too late, and I missed a mighty high-priced honey crop.

I believe last year's experience will not be without its value to me. The conditions remain the same in my own home bee pasture. Not enough white clover showed up last fall to create a bit of enthusiasm in a beekeeper. But in the places south and north of me on the creeks there was plenty. I took several trips to find it, and I know where it is and a good many places where it has been before and isn't now.

I have changed my mind about how I will keep bees. I will put the whole apiary in the country next spring in yards of 40 and 50.

For moving and bringing home crops I may get, I bought a new Ford truck and went in debt for it too. If there is a place in the country where there is a chance for a honey flow, I intend to have bees there

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or in a place that seems equally good to me. As I intend increasing my bees, the truck seems to me to be a necessity; and I feel that it is not taking too many chances, as a good crop will pay for it two or three times, if the price stays near what it is now.

Even if the worst comes, the demand for trucks like mine is such that I need suffer little if any loss on it. If I am plunging a little, I have too many bees to risk a loss of a crop in these days of high-priced honey.

I am having a box made for the truck chassis that will be 50 inches wide by ten feet long inside. I estimate that I can move 30 to 45 ten-frame hives at a load. I can haul home a ton of extracting supers easily, as a ton load is a joke for the truck.

There are plenty of places where I can put the bees, as I have ascertained, and at little expense. I probably will run up against difficulties that will make me change plans somewhat, but I believe that the way I have in mind is the way to get crops one year after another in this locality.

Those here who have the trucks tell me that they can be run at about the same cost as a regular Ford car. They require a little more gas, but the tire expense is less, as the rear wheels have solid tires and wear a long time. They are used here for long trips, and seem to be as practical in every way as the lighter car and almost as fast; fast enough anyway. If we have a season that is at all favorable this year, and I don't break a leg or something else that is just as indispensable, I expect to have a honey crop next fall. If I don't, it will be because I don't know how to get it.

Sabetha, Kan.

Frank Hill.



HOW HE CHUNKED HIS HONEY

A Convenient, Neat and Cleanly Device for Cutting up Honey in Comb

In view of the probable shortage of sections and glass containers for honey this season, I thought it might be of interest to your readers to learn of a method of using up partly filled and sealed comb honey in sections or shallow frames, and selling them as chunk honey. Hitherto chunk honey has not been much on sale in this country; but, having on hand a quantity of partly sealed comb honey at the end of last season, I decided to cut it up and offer it as chunk honey in one-pound parchment packages.

I have not observed in bee literature any allusion to an appliance for cutting up comb and inserting it into a container, so I will give my method, in the hope that the idea may be of some use.

To make a cutter, a round tin canister (can) about $2\frac{1}{4}$ inches in diameter was

taken, and the edge at the open end was serrated by snipping out small triangular pieces with a pair of scissors, and a hole $\frac{9}{16}$ inch in diameter was punched in the bottom. A small wooden piston was then made, and the rod or handle passed thru the hole

in the bottom of the canister, thus making the cutter complete.

To use, lay a comb flat on a table. Press the serrated end of the cutter with a screwing motion thru the comb; lift out and transfer to the container; push the piston down and eject the disc of honey and repeat until the container is full. Extracted honey from the unsealed part of the comb is used to fill up the pot to the desired weight, and the lid pressed home. It will be noticed that during the operation the hand never comes in contact with the honey.

The demand for those packages of chunk honey exceeded the supply,

and the price received was the same as for my first-grade sections.

Strachur, Scotland.

Arch'd Fergusson.



Dr. Phillips calls attention in his book to the fact that swamp lands are often particularly valuable as bee pasturage, because, with so much available moisture, their plant growth is likely to be more regular and dependable, less changeable from season to season; and he likewise pays tribute to the less important sources of nectar, those that most of us are so likely to overlook or regard as unimportant because they do not produce surplus. If there were no nectar except what is secreted by the plants that give us surplus, there might be no surplus. It takes hundreds of pounds of honey each year for the colony to support itself and carry it thru its life processes and changes; and for this purpose the bees visit a multitude of plants, each of which yields its little toward the great total required,

SELDOM, if ever, have we had such an adverse spring. A few warm days induced me to bring my bees out of cellar March 23, yet up to May 1 there has seldom been a day for them to fly; and I suspect they would have been better off in cellar until now.

* * *

DREAMS OF BOYHOOD.

Oh, Doctor Miller!
If you want a filler
To tickle your palate again
Like the pies of mother,
Some corn pone or other,
I fear that you're longing in vain.

For the tastes of a boy,
"His grief and joy,"
Are born of a growing frame,
And never are known
When to man he's grown,
With the same dietetic fame.

With age on you stealing
If you ate with such feeling,
I would fear for your comfort and life;
That swift apoplexy
Would surely catch you
And you'd depart this world and its strife.

So don't scold your wife,
Or worry her life,
With efforts to fill your vamp
With cakes and jam
Like you used to cram
As a boy in the sugar camp.

In your changed station,
Your daily ration's
For nourishment not for joy;
So eat at leisure
And dream of pleasure

That once was yours as a boy.
—Frank T. Kelsey, Moorhead, Mont.

Friend Kelsey, I appreciate your interest in my physical welfare, and accept with thanks your advice as to eating with moderation, but when you attempt to lull to rest my longings for some of the things I ate as a boy, on the ground that "the tastes of a boy are never known when to a man he's grown," and that now my daily ration is only for nourishment and not for joy, I refuse to be lulled.

In Shakespeare's "As You Like It," 80-year-old Adam says:

"Tho I look old, yet I am strong and lusty:
For in my youth I never did apply
Hot and rebellious liquors to my blood;
Nor did not with unbashful forehead woo
The means of weakness and debility;
Therefore my age is as a lusty winter,
Frosty, but kindly."

Same here. Not only have I eschewed alcoholic drink, but that great destroyer of taste, tobacco, as well, as also strong tea

STRAY STRAWS

Dr. C. C. Miller

and coffee, and hot spices. These, and not years, are the things that destroy the delicate edge of the organs of taste; and having avoided them

for nearly 87 years I now eat the modest ration needed for "nourishment" with the same "joy" as when a barefoot boy, so that if Stancy Puerden should offer me some of that crisp and toothsome preparation of corn I have not tasted for many a year, I should be very likely to say, "Yum, yum; tastes like old times."

Let me advise my young friends that abstinence and moderation in youth pay big dividends in old age. While I eat with the same relish as in boyhood's days, my enjoyment of the beautiful in sights and sounds is immensely greater than then, and increases from year to year. My dreams of the past are pleasant; but my greater joy is in the present and in dreams of the future. With Browning let me say to you:

"Grow old along with me!
The best is yet to be,
The last of life, for which the first was made;
Our times are in His hand
Who saith, "A whole I planned,
Youth shows but half; trust God:
See all, nor be afraid!"

* * *

On page 271 the first illustration shows "Colonies a and b crowded onto as few frames as possible" preparatory to uniting. That's all right, only I have found it well, in the colony to be moved, to have a sufficient space each side of the combs, so that none of the outside bees will be left clinging to the dummy or side of the hive.

* * *

"Our experience is that a nucleus will travel safely many hundreds of miles with a loss of less than one per cent, while bees in cages without combs will have a mortality of from 33 to 50 per cent," page 280. Yet because of the danger of disease it is counted better to ship in cages, as bees sent thus have been combless long enough to be safe from disease. A question arises. Why not ship nuclei, and then after they are received make them combless long enough to be safe? Would, or would not, the 33 or 50 per cent of bees saved pay for the extra expense of the nuclei? [The plan would be all right, if the consignee would do it.—Editor.]

* * *

"But can you recommend putting two weak colonies together with a newspaper between, in early spring? Is it not true that the cluster may be so weak that they will not work thru the paper?" Thus, ye editor, page 282. Yes, that is possible. I have sometimes punched a hole thru the paper with a lead pencil, and it seemed to work all right.

Yet if left without that, would there be any great harm, at a time when they are too inactive to tear paper, for them to be left imprisoned a week? At the end of that time you would be likely to look after them anyway, and if necessary could then make a hole in the paper, and feel quite sure against their returning to their old stand. [When the hole is not punched thru, in some cases we have had the bees die of worry. If the two lots of bees are not too weak, they will make their own hole.—Editor.]

* * *

Speaking of A. I. Root's saying, "There is no easier, quicker, and safer way of feeding bees that are short of stores than to give them sealed stores of honey," J. E. Crane says, page 283: "This is quite true; but how are we to proceed when we have no sealed stores, as often happens in spring time?" Well, in that case we must do the best we can, and the way you offer answers; but really, friend Crane, do you think being caught without sealed stores "often happens in spring time" with the right kind of beekeeper? Just between you and me, I should say once, and never again. For after being caught once, ought it ever to happen again that he does not provide the previous year for a stock of sealed combs for the following spring? Often, if not generally, these sealed stores may be of fall, dark honey, in which case there is a gain in having them, even if not needed to prevent starvation. For when the flow of white honey comes, a lot of empty space must be filled in the brood-chamber before storing in supers begins, and, if these extra combs supply this need, it will be really swapping fall honey for white honey in the supers.

* * *

G. A. Sheppard, you are told, page 300, that it would not be well to use drone foundation for sections, since "the worker foundation results in comb of such superior grade that this more than offsets the apparent preference of the bees." There's an additional reason. Bees prefer drone-comb because they want to raise drones, and if you should have a super filled with drone foundation you may count on a big lot of space in the super filled with drone-brood. To be sure, you can prevent that by the use of an excluder, but that's an extra expense and trouble, and besides, even with an excluder you will find that the bees will be slow to finish up some of the space where they expect the queen to come up and lay drone eggs. When using worker foundation in sections, more than once, if a section happened not to be entirely filled with foundation, I have found the vacancy filled with drone-comb, and not a drop of honey in it, the bees holding it open for the queen's use.

* * *

J. L. Byer, you seem to link me up with a certain editor in insisting on empty cells as a "winter nest," page 162. Said editor is too conservative for me. So are you. You think "bees will get along splendidly, even

if combs are about solid at the beginning of the winter." I think they'll get along all right if combs are entirely solid at the beginning, middle, or end of winter, provided there's plenty of room to cluster under the bottom-bars. ["Provided there is plenty of room for the cluster under the bottom-bars."—aye, there is the rub! In most brood chambers that condition does not exist. While it may be a matter of locality, solid combs of stores would be all right here in November, but before cold weather sets in the bees would have to make a winter nest.—Editor.]

* * *

Stancy Puerden, you say, page 156, that you put grain thru your hand-mill twice, because it makes a more evenly ground product than to attempt to grind it fine the first time. I didn't know that, but have always ground twice because it's too hard work to make it fine enough the first time. Thanks for telling me what's your name. Now tell us whether there's some good way to cook cornmeal mush without standing over it stirring all the time. And look here, Stancy. You don't want to be called a deserter or a slacker these times, do you? Well, then, don't talk any more about stepping out and giving some one else your job in Gleanings.

* * *

As addenda to what is said on page 302, let me say something of what I have learned from quite a bit of experimenting in introducing virgins. If a virgin is picked out of her cell before maturity, she will be thrown out of the hive, not because a queen, but because immature, just as an immature worker would be. When quite mature, and until she attains a certain age, she will be received kindly in any colony, even in one with a vigorous young laying queen, or one with laying workers. No precaution is necessary in introducing; just drop her on the top-bars or let her run in at the entrance. But when she ceases to be a baby, and begins to put on airs as a young lady of royal blood, then it's a different story. She will be promptly assassinated wherever introduced, unless in a colony that feels desperately in need of a queen, or one which is about to supersede its queen. I'm sorry I cannot say just when the change from a baby to a young lady occurs. Possibly when she is about 24 hours old. In a number of cases I have dropped into a hive with a laying queen a virgin not long after emergence from her cell, found her all right five or 10 hours later, but the next day missing. But if the bees desired to supersede their queen, the virgin would be retained. G. M. Doolittle tells of requeening by giving a young virgin late in the season. It is almost impossible to introduce a laying queen into a colony with laying workers, but I think a virgin young enough might always succeed; altho a colony of laying workers is generally not worth a queen. Now can some of you tell us at what age the change of a virgin occurs, when she is no longer considered a baby but an aspiring candidate for a throne?

I HAD hoped to find in Gleanings for May full reports of the wintering of bees in the new style of winter case suggested by Dr. Phillips, with frames set on ends, but not a word so far. [In our locality the "stand-on-end colonies" wintered well, if not better than those in the regulation double-walled hives. We will have a further report next September.—Editor.]

* * *

In an editorial, page 268 of Gleanings for May, the loss of bees in consequence of a large entrance is mentioned. A loss of 90 per cent ought to satisfy the advocates of large winter entrances that their method is not the best. If we multiply the size of an ordinary brood-chamber by 12, we shall have the size of the ordinary living room we ourselves live in during winter. Now let us also multiply the one-inch entrance across the end that some beekeepers advocate, and we shall have an opening at the end one foot high clear across the end of our room. Well, how would you like it with the mercury 30 degrees below zero?

* * *

There has been a greater loss of bees in this section in wintering than I had thought earlier in the season. The loss seems to be confined largely to inexperienced beekeepers, or to shiftless ones who have given the bees little thought or care. My own loss has been a little more than usual, but not large. Last week I examined one yard that went into winter with 120 colonies, and I discovered a loss of only four dead. I broke up another colony, it being weak, thus making a loss of five colonies or four per cent. Most of the others were in good shape. This shows that with care bees can be wintered in the most severe winters, on summer stands, here in the North without serious loss. In another out-yard where considerable honeydew was stored last year, and the yard moved during winter, there was some dysentery and a loss of 12 per cent. [There is no question but that the past winter, east of the Mississippi, was very hard on bees. It may go down in history as worse than the winter of 1880 and 1881. In the western States bees wintered well.—Editor.]

* * *

That is a decidedly interesting article by the editor on "May Work" among the bees, and especially in regard to "Equalizing Brood," pages 274 and 275. The illustrations are good, and so plain that the beginner can not fail to see the point. However, I find myself more frequently working on a little different plan in trying to bring up weak colonies. Instead of leaving the

SIFTINGS

J. E. Crane

brood in three or more patches in as many combs, I move the brood to one side of the brood-chamber and confine it to two or three combs, by using a di-

vision-board or a heavy comb of honey. It has seemed to me that bees will spread their brood faster when allowed to put their brood into several combs. As soon as we get two combs well filled with brood, it is an easy matter to spread them and give a comb of mature brood from another hive. Also, sometimes where a colony is too weak to care for brood, I give to it all the bees that adhere to the comb removed from the strong colony, taking care that the queen is not on the comb. More or less of these bees may go back, but not faster than the young bees are hatched to take their place. I was at first a good deal exercised for fear the bees that were removed with a comb of brood might kill the queen of the weak colony when introduced with the brood, but I have rarely had it happen.

* * *

On page 277, Harry T. Huff tells us how he uses comb foundation for extracted honey, and he would have us believe that by his superior method of using the foundation he can get as much or more than where drawn combs are used. He also says he secured 50 pounds of surplus, while 160 colonies with drawn combs gave only 25 pounds of honey per colony. Had he stated whether the 160 colonies were equally strong in the spring and the locations equally good and flowers equally abundant, his statements would be more convincing. [The universal rule is that drawn combs are far superior to full sheets of foundation.—Editor.]

* * *

Grace Allen informs us on page 287 that she picked the first clover blossoms March 31. It is May here in Vermont and we are yet looking forward to some time in June before we shall enjoy such a pleasure. I have been wondering if they have any winter down there in Tennessee. Her experience with winter protection for bees is interesting, and I am not surprised that she found all her moldy combs under sealed covers. It is surprising that she received no more benefit from winter packing. I wonder if the leaves were dry and packed down firmly. Leaves are apt to be too loosely packed to be of much use, unless they are pressed down and made to stay put by some weight.

* * *

In looking over "Bees, Men, and Things," I ran across our old friend, Eugene Secor, and I was glad to hear from him. He still has ideas that are worth our attention.

WHAT book do you suppose was one of the best sellers last year? Indeed, I am not sure but it was the very best seller, excepting the Bible. That book was Farmers' Bulletin, No. 839. Perhaps I should not call it exactly a best seller, as it is free to everyone. Its subject is Home Canning by the One-Period Cold-Pack Method. Now you may have heard stories of women who spent hours in the hot kitchen canning vegetables, only to find them spoiled and their time wasted a few months later. I have taken pains to investigate stories of that sort which came to me, and in every case I found that the methods worked out by experts in the Department of Agriculture had not been implicitly followed. And I have heard of hundreds of other women who successfully canned vegetables sufficient to supply their families all winter. This is the type of remark I so often hear, "We never lived so well as we have this winter in spite of high prices, the sugar shortage, and the necessity of conserving so many foods. Our canned vegetables made it seem like having a garden all winter, and how it did reduce the food bills." It is certain no commercial canned vegetables have the delicate flavor of the home product.

You have all read of the boys' and girls' canning clubs. Did you ever hear of these clubs having trouble with their product spoiling? Sometimes I am inclined to think it is the very young people who succeed best in the cold-pack canning. They take up the work, realizing that they know nothing about it, and they are willing to implicitly follow instructions. Capable housekeepers, who have canned fruit successfully for years by the old methods, are apt to believe that such care at every step in canning vegetables is unnecessary, and omit one part of the process, or shorten the period of sterilization. Don't do it. Under favorable circumstances your vegetables may keep, even if you are a little careless about obeying directions; but there is just one safe way, and that is to follow every step in the process from the cleaning, blanching, cold dip, and sterilizing to the final tightening of the covers and inverting the can to make sure it holds.

Perhaps some of you noticed an article, which went the rounds of the press last winter, to the effect that there was great danger of poisoning from eating cold-pack canned products, due to a certain wicked bacillus with a hard name. One of those articles gave a list of deaths in various parts of the country said to be due to that cause. The dates at which these deaths occurred were

OUR FOOD PAGE

Stancy Puerden



spread over a period of some thirty years, and, with two or three exceptions, all occurred before the modern one-period, cold-pack method was in general

use. I could not help wondering if the origin of that story was not another instance of German propaganda. Just to make sure of killing any such undesirable bacillus in your canned foods, turn out the contents of the can, bring to a boil, and keep it at the boiling point several minutes. It can be cooled before using,

if it is desired in a salad.

Being of an investigative turn of mind and also having great confidence in bulletin 839, I tasted the contents of every can of vegetables I opened this winter before heating them, and I am still very much alive.

Begin your canning early and thus make sure of a varied assortment. Even if you have time for only two or three cans of each vegetable as it comes, it will be a wonderful help to winter-menu planning. Canning is a form of food hoarding to which Uncle Sam gives his cordial approval.

For bulletin, No. 839, send to Division of Publications, U. S. Dept. of Agriculture, Washington, D. C.

Those Interesting Vitamines Again.

Do you know to be stylish and up-to-date, I should say, "so called vitamines." Certain tiresome scientific (?) investigators seem to have a grudge against the word "vitamines." Why they dislike such an innocent looking, serviceable word I cannot see, unless it is because they had nothing to do with the christening. As the history of "so called vitamines" is still in the making, research along this line being pursued by a number of independent investigators, I can see the editors have a feeling that Stancy is "rushing in where angels fear to tread." Calm yourselves, gentlemen, I do not mean to say one thing about "so called vitamines" that is not culled from the highest authorities. But I am going to say this much: I believe those scientific investigators are going to have their work cut out for them when they try to take that word "vitamine" away from the public. The public has adopted it joyfully, various advertisers are calling attention to the fact that vitamines are in their products, and people everywhere are asking food writers and teachers to tell them more about vitamines. It may turn out like some slang words which we have been obliged to incorporate in the English language.

You may remember, in the April number, in the little that I wrote about vitamines I said there were two well recognized types, and some believed there were even more. As one of these types is soluble in certain

fats and the other is soluble in water, one prominent investigator proposes that until chemically identified they be known as "fat soluble A" and "water soluble B." "Fat soluble A" is found in the fats of milk, eggs, certain animal organs, cod-liver oil, the leaves of certain plants such as cabbage and alfalfa and probably others, and in millet, hemp and flax seeds and wheat embryo and corn embryo. "Water soluble B" is much more widely distributed. I have seen it stated that it is in practically all foods. That should be amended to say "in nearly all foods in the natural state." Polished rice, fine white flour, refined sugar, and corn syrup are totally lacking in "water soluble B," and it is weakened and destroyed in many other foods by faulty methods of preparation.

Now of course it is "water soluble B" which is in honey, altho between you and me and the rest of the Gleanings family, I should not be at all surprised if in the course of time some other very interesting things are found out about honey. Personally I am a great believer in natural foods, served just as nature gave them to us, altho I do publish some recipes which might lead one to believe otherwise.

Don't get the idea that "water soluble B," because it is more common, is less important than "fat soluble A." Sherman in his *Chemistry of Food and Nutrition*, just published in March, says: "Both 'fat soluble A' and 'water soluble B' are held to be essential for the maintenance of health as well as growth. The 'fat soluble A' appears to be dispensable, when maintenance alone is involved, for a somewhat longer period than is 'water soluble B,' which accounts for the polyneuritic symptoms in birds kept on a polished rice diet and the cure of these symptoms by the extracts of foods rich in 'water soluble B.'"

Milk and egg yolk are unique in being rich in both "fat soluble A" and "water soluble B."

Wheat Versus Other Grains.

The Food Administration is still emphasizing the great need of wheat saving, and you know the best way to save wheat is not to use it. Mothers sometimes say to me, "I would not dare to deprive my family of wheat to the extent that we are asked to do. My children need nutritious food." Certainly they do, and it is your first duty to see that your children have plenty of good food. But dietitians who have studied the matter thoroly tell us over and over again that wheat possesses no nutritive qualities for man or beast, superior to those of oats, corn, rice, or barley. Wheat is undoubtedly the most delicious of the grains, the one which we can eat longer than any other without tiring of it, the one which makes the finest, lightest bread, and the bread which has the best keeping qualities.

Our Pilgrim Fathers managed to live years at a time without wheat, and they were no

weaklings. Our southern States had to get along without wheat for over two years during the Civil War, and the Southerners have always used a great amount of cornmeal, altho they live in a warmer climate and cornmeal is popularly supposed to be heating.

In making bread with a large proportion of wheat substitutes this warm weather, if you use the long process, you may find it necessary to add a very little soda to the flour when mixing it into the solid loaf, one teaspoon of soda to a baking of four loaves of bread. We must admit that the present generation, with all its domestic science, cannot excel our mothers in bread making, and several of the older ladies have told me that they always add a little soda when making bread with the heavier flours in warm weather.

Notice that this month I am giving two kinds of quick bread, a cake, biscuits, and muffins, all entirely wheatless, and I can heartily recommend all of them. The breads are very good cold and help solve the problem of wheatless sandwiches for picnics. They are particularly good with a cottage-cheese filling.

Please try the rice-flour sponge cake. It is quite as light, soft and delicate as a sponge cake made of wheat flour, and it keeps well, if you hide it.

The editor, for reasons of his own, has a way of camouflaging my recipes by scattering them all through the advertising. I hope my friends will not give up the recipe hunt until they come to the line, "all measurements level."

May I take this opportunity to once more thank the readers who write such delightful and appreciative letters. If I am unpardonably slow in answering them, it is not because I do not love to hear from you but because I am a very busy woman.

RICE FLOUR SPONGE CAKE.

4 eggs	¾ cup flour
1 cup sugar	2 tablespoons lemon juice
	½ teaspoon salt

Separate the whites and yolks of the eggs, beat the yolks until thick and light colored, sift in the sugar, add the lemon juice and beat until smooth. Add the salt to the egg whites, beat with a wire whisk until stiff and dry, and fold into the first mixture, and last of all sift in the flour a little at a time, folding it in lightly. Bake in a slow oven about 45 minutes.

RICE AND BARLEY RAISIN BREAD.

2 eggs	1 cup rice flour
1 cup sweet milk	2 cups barley flour
3 tablespoons shortening	1 teaspoon salt
	7 teaspoons baking powder
3 tablespoons honey	1 cup raisins

Beat the eggs in the mixing bowl, add the honey, the melted shortening, and the milk. Stir in the flour in which the salt and baking powder have been sifted, and then the raisins. Put in an oiled loaf pan. let rise 15

(Continued on Advertising Pages.)

THERE'S one thing side-line beekeepers must remember, especially those in cities, keeping a few hives in their backyards. It doesn't pay to

get discouraged because their bees don't produce as much per colony as some that are reported in the journals. Locality is a big, big factor in beekeeping, one of the most important, if not actually the most important. You may be as proficient as study and intelligent application will make you, but if your bees can't reach any good pasturage, they can not pile up the honey like those that, with perhaps not nearly so much attention, have a wealth of nectar-bearing bloom around them. When a man who is keeping bees commercially decides his location is not good enough, he may move his bees and completely change the results of his labor. But the side-liner is not likely to do that (tho we've moved part of ours this year); his bees are like his chickens and his strawberry patch and his garden, a pleasant and profitable part of his home yard. So he may have to be content with an average of 40 or 50 pounds, while his country friends tell him of their 100-pound average; and he reads of hives that give, under exceptional conditions, 300 or 400 pounds. Yet there is scarcely a spot where there is not enough nectar to pay to have two or three hives of bees to help supply the family needs and to add intensely to the delights of the owner.

* * *

I don't like being the exception that proves the rule, page 268, May. I'd so much rather be one of the straight irrefutable proofs. But now that the season is nicely started, the case of packed hives vs. unpacked doesn't look a bit brighter for the packed. One of the four colonies in the quadruple packing case perished (any amount of packing won't save a colony that loses its queen); another, when the packing was removed the last week in April, was scarcely more than a nucleus; another is fair; while the fourth is one of the best five colonies in the yard—the other four, including the very best one of all, having gone thru the winter with no protection other than supers of leaves and contracted entrances. When putting these colonies in the packing case in the fall, we were at some pains to take four good ones.

The two that were packed in big single cases came out among the weakest in the yard this spring; in fact, only No. 2 in the quadruple case and one unpacked colony were so backward. These two, however, in the single cases, were not particularly strong when packed, being among the 1917 increase built up from nuclei. On the other hand, the other colonies of the 1917 increase, built

Beekeeping as a Side Line

Grace Allen

up side by side with these two, under exactly similar conditions and management, and wintered without any protection whatever, came out better.

Of course I am not so silly as to attribute this to the lack of packing, tho had the difference been on the other side, I would doubtless have given the packing the credit. [Until full details of packing, entrances, wind protection, stores, strength of colony, age of queens and other essentials are given we do not think that conclusions should be drawn, especially not in so small an apiary. We suggest a more complete trial next year. —Editor.]

This has been an absurd sort of season here, so far, an early spring that was also late. I have heard that there are men who are very courtly until they have won their brides, and then, after the wedding, become cold and neglectful. That is how this spring has treated its blossoms. Most friendly and smiling and inviting thruout March, the spring turned a cold shoulder when black locust had come with its fragrance and white clover with its beauty, and most of April was chill and drear and disappointing. Even the night of May Day, while we drove to the country with a few recently purchased bees, we were be-coated and be-rugged as tho it were winter, and that night there was a heavy frost. Frost in Tennessee on May Day! And that, after clover blossoms on Easter Sunday, the last day of March! Badly mixed, indeed, and not a bit ideal for bees or beekeepers—or farmers. One Nashville man had a small field of turnips in full bloom for seed, for which he had already received an offer of \$1,200.00, when the frost came and killed it all. But prospects are good now, and there is a wealth of white clover in bloom.

* * *

There's been considerable early swarming, or efforts in that direction. One side-liner with only four hives lost two swarms before Apr. 25. Locust and clover both coming unusually early must have excited the bees. Colonies with plenty of room, the double brood-chambers being by no means crowded, started queen-cells before anyone suspected them. I wish swarming were orthodox, anyway. Artificial increase, however you make it, is a cold business-like proposition, while a swarm in the air is a thing of thrill and romance. But please don't think, because of the last stanza of this month's verse, that I customarily let mine go off! Customarily I don't have any; and never lost but one, a little "tee-ninetsy" that deserted one August, the day after being hived in a shallow super and left out in the hot sun. We all admired their spirit in go-

ing. But this spring, when I found sealed cells in one colony (with plenty of room) one day in late April, I believe I was secretly and foolishly pleased. I would have prevented it if I had discovered it sooner, but as I had not discovered it sooner, "let 'er swarm" I wrote in my record book with glee. And she swarmed. It was the third day of May when they came out, "aquiver, ecstatic and singing." Probably it isn't good taste to quote one's own lines, but you see that's just how they did come, "aquiver, ecstatic and singing." I sympathized with the mood, feeling that way myself. But we've no right to indulge our side-line taste for swarms.

The hive that does not swarm at all,
Thou mayest think it funny,
Will beat the swarmer, *plus the swarm*,
In gathering the honey.

Anyway that's the general belief.

"How many bees did your father lose?" I asked a freckled smiling boy one day. He left the backyard camp-fire to come to the fence and talk. "Oh, he lost a lot!" he answered tragically. There were only eight colonies in the yard at the time, so I inquired sympathetically how many there were last fall. "Ten," was the answer. "Oh, well," I exclaimed, relieved, "he didn't lose so very many after all." "Hm!" ejaculated that small boy, with the scorn the knowing ones often show for the uninformed, "there's 10,000 bees in every one! Aint that a lot?" I admitted it was.

I've never been an inspector like Mr. Crane, but this spring I have examined hives in two "let-alone" apiaries, while Mr. Allen had the same experience in a third. We did not enjoy it a bit. Moreover, I scorn home-made hives. These had no bee-escape at the top, and an embarrassing quantity of bur-comb. Many good combs were unwired, and joggled nicely to pieces when moved over fairly good roads; for we bought some of them in spite of everything, took them with all their faults, and love them still—the bees, that is, not the home-made hives and the bur-comb and the drone-comb and the broken comb.

On page 281, May Gleanings, is an extract quoted from Dr. H. W. Wiley, attributed to Good Housekeeping, March, page 44. According to this quotation, Dr. Wiley says, "When I went into the stores and asked for 'corn syrup' I was uniformly handed a can of 'karo.' I sought in vain for the term 'corn syrup' on the label." But it's on the labels of the Karo I get, Dr. Wiley. Right across the top runs the legend, "A table delicacy prepared from corn syrup of the highest grade, granulated sugar syrup, and vanilla flavoring." Is there a mistake somewhere? As it evidently contains granulated sugar, it may not be the complete substitute for cane sugar that many people have thought.



Huge swarm of Texas side-liner, L. A. Cameron, Bloomington, Tex.

THE SWARM.

If Swinburne, the melody-maker,
Or Keats with his passion for beauty,
Or Wordsworth the chanter to duty,
Or Herrick or Shelly were here,
Where the air is alive with strange humming
And filled with a going and coming,
The Queen of my bees, the Forsaker,
Forever would sing in your ear!

Uncounted, her people come winging,
This hour that the high sun is warming,
This hour of their annual swarming,
This exodus hour of their year;
And above the hive home they are leaving
A great web of wings they are weaving,
As, circling and sailing and singing,
They float and they plunge and they veer.

Their wings are a gleam and a glimmer
In sunlight of magical Maytime,
Till a flame that is brighter than daytime
Seems flashing its radiance near;
Such rythmical meeting and parting!
Such gay and bewildering darting
Athwart all the silvery shimmer!
Such brave and adventurous cheer!

Like sun-motes they hover suspended,
Aquiver, ecstatic and singing;
Then slowly go swaying and swinging
To a restful old cherry tree near,
Till there on the tree hangs the wonder!
Draw close and fold over and under—
The song and the shimmer are ended
And only the silence I hear.

O Queen, with your people around you,
The pulse at the heart of the cluster,
How old are the instincts that muster
Such cohorts out, year after year?
Is the swarm of your will and volition,
Or because of an ancient tradition?
What honor code was it that bound you
To venture forth thus without fear?

It may be a dumb hidden yearning,
Some urge of which you are partaker,
That makes you, O Queen, a forsaker
Of the fragrant hive, dusky and dear.
You have left the old home in the keeping
Of princesses quietly sleeping,
While you, when your scouts come returning,
Must journey o'er woodland and mere.

For the swarm will arouse from its resting,
Take wing and fly off without sorrow
Straight into its dream of the morrow,
Till the far chosen place shall appear;
And there, of the deeps of its passion,
New cycles of hope will it fashion,
For such is the goal of its questing
In the mystical spring of the year.



FROM NORTH, EAST, WEST AND SOUTH



In Northern California— Weather conditions were not particularly favorable during April. A little more rain and fewer strong winds would have pleased the beekeepers far more. In some of our districts bees are short of stores and no increase has been possible, but in others a 20 to 30 per cent increase is materializing. Due to the lack of a late April rain, the blooming period of spring plants will be below normal, and no May increase is anticipated before the first alfalfa extraction the latter part of June. Tulare County beekeepers are securing a good crop from orange.

The disease situation has taken a turn for the worse. Several localities thruout northern California have had outbreaks of American foul brood. Not a few apiaries and localities that heretofore have had clear records, are now being visited by *Bacillus larvæ*. European foul brood is continuing to enlarge its area of infection, the extreme northern part of the State (and notably Merced County) being as yet unaffected territory. Merced County should begin at once to introduce resistant Italian stock since it is estimated that fully 75 per cent of the bees in that county are blacks. The matter of differentiating the brood diseases continues as baffling as ever, especially in their earlier stages of development. Many experienced beemen, who have handled both diseases for several years, are very much puzzled at times as to which course to pursue. Some beekeepers are no longer surprised, upon examining a comb infected with European, to detect American on the next comb examined.

The progress of the California Honey Producers' Co-operative Exchange is most satisfactory. The promotion committee reports that membership in the exchanges is increasing rapidly. Exchange Organizer Massey has placed six field organizers in various districts and expects to place two more very shortly. In five districts we have already 50 per cent of the colonies signed up, and in three of these the output totals more than 75 per cent. The Central Valley Honey Producers' Exchange is now in successful operation, and before July 1, it is expected that seven more locals will have been organized. At that date the machinery of the California Honey Producers' Co-operative Exchange will be put into motion. This central body will market the honey of, and purchase the supplies for, the various local exchanges. The necessity for a central body to market the bee products of the locals is very apparent. It may be mentioned that honey buyers two weeks ago offered producers in a certain district 16 cents per pound, whereas in another district at the same time a price of 15 cents was offered. In still another district only a few days ago

producers were offered a fraction over 17 cents per pound for this season's crop. The quality of the honey produced in the three above mentioned districts is the same. It might also be cited what is now (March) taking place in New Zealand and Australia. New Zealand has a powerful co-operative honey producers' association and it is securing for its members prices ranging from 14 to 19 cents per pound. Australia, on the other hand, without such an organization, is at the mercy of the buyers, for her beekeepers cannot get more than 8 to 10 cents per pound for their honey. California beekeepers are fast realizing the fact that they, as individuals, are unable to inform themselves properly on the honey market, but that collectively it is not only possible for them to secure the market price at time of sale, but also that they will know at what time it will be advantageous to sell. They will likewise know that each one of them will receive the same price for any uniform grade of honey.

In the March issue of the Monthly Crop Report we find some rather startling figures pertaining to beekeeping. There are 496 apiarists in California, which number represents 23 per cent of all of the apiarists in the United States, the total number in the United States being 2,145. These figures were compiled from the last U. S. Census, and the Monthly Crop Report believes that these figures since 1910 would be increased by 10 per cent. The Bureau of Entomology contends that there are now some 800,000 beekeepers in the United States, instead of only about 2,359 apiarists, as the above mentioned publication would indicate. The difference, however, lies probably in the use of the terms "Apiarists" and "Beekeepers." An apiarist, according to the U. S. Census, is probably one who gains his living solely from beekeeping. However, a comparative study of these figures is interesting. Next to California are New York and Texas, with 231 and 180 apiarists respectively, and their total still gives California a surplus of 105 apiarists. Ohio, for instance, has but 42. California has always had the reputation of having many large honey producers, and the above figures as published in the Monthly Crop Report would bear out this fact. M. C. Richter.

Modesto, Calif.

In Southern California— So far as I can learn now, May 4, the orange honey crop will vary from 20 pounds, on some apiaries that were very weak and late in getting in condition to gather honey, to 40, 50, and possibly some as high as 75 pounds per colony from the best apiaries. Most beekeepers and orange-growers say they never saw so plentiful a bloom as this year. And what is still better



FROM NORTH, EAST, WEST AND SOUTH



for the beekeeper is the fact that the blossoms are full of nectar. Such an abundant secretion has hardly been known before. When I say that many orchardists, who work in the groves, wash the nectar from their horses and harness every night, one can get some idea of what a quantity of nectar there is in the flowers in one of our banner years. One can take a blossom just opening and jar a drop of the precious sweet onto his hand. In that local district where so many thousands of colonies are located near together, all are getting good results. Some orange-growers, whose orchards are only a half mile from several hundred colonies, remark on seeing few bees on their orange trees. Where there is more nectar in one blossom than a bee can carry—and Dr. Phillips says that each bee carries but four loads a day—with the trees one mass of bloom (there must be tens of thousands of blossoms on a tree 20 feet high and 15 feet across), you have a faint conception of the chance the bees have to get to all the flowers. So the question as to whether the southern California orange district can be overstocked during a good honey flow has been answered this season in the negative.

With the exception of three or four days of dry north wind, the weather in these parts has been almost ideal for the secretion of nectar during the orange flow. Many years we have foggy, cool weather so much of the time that the bees are not able to work, but this year has been very satisfactory. Unfortunately, some beekeepers consider that from 25 to 50 per cent of the crop has been lost owing to the poor condition of bees, disease, and slowness of colonies in getting ready to gather honey.

Navel oranges are the first to blossom, and are now pretty well past. Sweets, St. Michaels, Valencias, and Seedlings follow in order, overlapping each other in blooming period; and one who has all of these varieties on his range is very fortunate indeed. The orange bloom will last in most sections of the southern part of the State until May 15 or 20.

It is reported that buyers are offering 20 cents per pound for white extracted orange honey, with but few producers ready to contract. So many sold their honey last year at prices so far below what others got, that very few are willing to contract at any price. They prefer to wait until the crop is made before selling.

Weather conditions here are not good for the later crops of honey so far as moisture is concerned. The ground is dry and rain is needed very badly. Even tho we had copious rains for a month during the latter part of February and the first of March, since that time it has continued dry and prospects are not good for any more rain.

It is very seldom that we get enough rain to be of any benefit after May 1. In some sections where the rainfall has been over 15 inches, and where the character of the soil is such as to hold moisture well, beekeepers will likely get fair crops of sage and buckwheat honey. But in much of the honey-producing territory that depends on the rainfall for a crop, the prospects are not good for much of a yield. Mild weather, such as we had last year until the hot wave in June, will give a much better chance for honey than very warm weather.

Many beekeepers of this section are of the opinion that the heat wave of last summer so injured the queens that they have not had the usual vitality to properly build up a colony for the early spring flow, especially for the orange flow. In my own yards, while I find many colonies that have built up well, they are now, just at the height of the orange season, preparing to supersede the old queens. Many of these queens appear to be in excellent condition—large, plump, active, and with good frames of compact brood. To all appearances, these conditions would indicate a queen in her prime. But the bees seem to realize that all is not well with her, as in many cases we find from two to six fine queen-cells ready to hatch. Sometimes we find one that has hatched, and the old queen still laying. In some cases a swarm goes out with the virgin, while the old queen is still laying in the hive. Sometimes this swarm will go back; but, if we happen to hive them, they are a week or so getting a laying queen, in which case the hive is filled with honey and the queen is forced into the super to lay. Conditions this year are in many ways different from any other I have ever experienced. The bees in some apiaries seem to be determined to swarm, no matter how much honey is coming in or how much room they have; while others swarm but very little.

Some apiarists moved several hundred colonies from the back country, as we call it, in the sage and wild buckwheat range of the eastern part of Riverside County, to the oranges of Riverside. One of these on visiting his home ranges found honey almost ready to extract, while the bees in the orange district were doing nothing. The manzanita, which begins to bloom in February and in ordinary years when the weather conditions are too cold for bees to gather honey, this year came when the weather was almost like summer. With plenty of nectar in the blossoms, the bees in many cases filled their hives full in February and March.

Reports from the great alfalfa regions of Imperial and Riverside Counties indicate that the crops will be satisfactory, and prices are sure to be good.

L. L. Andrews.



FROM NORTH, EAST, WEST AND SOUTH



In Michigan—In many places there is nothing left but "seed" for foul brood. The mortality among the bees has continued up to the present (May 8) and indications are that, unless bees are carefully watched, there will be a heavy loss of bees and brood from starvation during May and June. There is no excuse now for not feeding sugar syrup. When there is beginning to be a shortage of food, feed at once.

Many Michigan beekeepers will be interested in knowing that P. W. Erbaugh, a former deputy inspector and later a special agent for the Federal Bureau of Entomology, enlisted in the Marines in February and is now stationed at Paris Island, S. C.

Now is the time to buy up the remnants of the apiaries which have been wintered outside without protection. Many such beekeepers have made up their minds that beekeeping does not pay. Get those few remaining colonies into your apiary and make them producers.

Before long we shall be able to class Michigan among the states which produce some alfalfa honey. A strain of seed-bearing and nectar-producing alfalfa is being developed in this State. I cannot say anything further without giving away a secret, but the facts are as above stated, and we may look forward with confidence to the time when alfalfa will be an asset to the beekeeper.

Inspectors are finding that the winter loss among the beekeepers that are not specialists runs from 50 to 100 per cent. The names of hundreds of beekeepers will be removed from our list as a result of the past winter. But the tendency is very strongly towards the elimination of the small, careless beekeeper as a means of protection against the brood diseases. So, we may consider the losses of the unproductive beekeeper as a real gain for the industry. In order to remove the temptation of trying it again, the better beekeepers would do well to buy up the equipment when reasonable terms can be agreed upon.

This spring will witness the beginning of an unprecedented number of new beekeepers. Possibly many of them saw the headlines of the Saginaw paper, which, after the State Association meeting last fall, announced in large type that Ernest Root said, "Every Family Should Keep Its Bee." Likely the scarcity of sweets during the past winter has had a great deal to do with Michigan people desiring to produce honey for their own use. The Agricultural College extends to such beginners the invitation to take advantage of the help that the College may be able to give them.

On May 1, Edwin E. Baldwin of Florida, a special agent of the Federal Bureau of Entomology, came to the State for a series of

meetings with beekeepers. A schedule was arranged which enabled him to meet the beekeepers of 19 of the most important honey-producing counties of the southern part of the State. He brought from the Federal authorities a powerful appeal to the beekeepers to make a special effort this year to supply as far as they can the tremendous demand for sweets that has been especially evident during the last year. Those beekeepers who heed his advice will produce larger crops and be better beekeepers in the future.

The month of May marks the beginning of another improvement in the service that the State is giving to the beekeepers. Edwin Ewell was appointed by the College to the position of Extension Specialist in Beekeeping. Mr. Ewell will work from the office of the State Inspector of Apiaries and will have charge of the organization work among the beekeepers. He will organize county and local associations, hold field meetings, give demonstrations of better methods of beekeeping, and will help beekeepers individually to become more efficient in their work. It is the intention to thoroughly organize every part of the State where beekeeping is an industry or where it can be profitably followed. The State will be better able to serve the interests of the beekeepers thru a knowledge of the needs of the various counties, which can be gained thru local organizations.

B. F. Kindig.

East Lansing, Mich.

* * *

In Ontario—The month of April in Ontario was cold and dry most of the time, and conditions were anything but good for the bees. As a result many weak colonies, that might have pulled thru under better weather conditions, perished outright; and many others, that seemed to be in fair condition earlier, weakened very much. Reports still coming in point to a very heavy loss over the province, and, from the data now at hand, I think it is safe to say that the loss will reach 40 per cent or thereabouts. Of course, this is only an estimate, but from present indications I am afraid that figure is no exaggeration. Losses are by far the heaviest in localities where fall flows usually occur and where natural stores are generally depended upon for winter. Much of the honey left with bees, in such localities, granulated very firmly and bees were unable to use it, either starving or getting dysentery; and, in many cases, full combs of this honey were left in the hives, and the bees were all dead.

In connection with this matter of winter stores, Morley Pettit says in the May issue of the Canadian Beekeeper: "Our bees, as far as we have examined them, have come thru in fine shape. We attribute our success



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in wintering, in such a severe winter as the one just past, largely to the fact that we fed sugar heavily in the fall." My report for the home yards would be something like this: "We attribute our winter loss and the general poor condition of our bees around here to the fact that, as a matter of sentiment, last fall we made our colonies heavy with combs of honey, instead of feeding sugar as we should have done." My loss is the heaviest in years, the bees left not averaging up in strength as is usually the case, and, as stated, "there's a reason." On the contrary, the bees at north yards where I had no combs of honey in the fall, and which, of course, had to be fed with sugar syrup, are in very fine shape, and many colonies are so strong even in this backward weather that they need supers early in May before fruit bloom.

Dry cold weather has not been conducive to growth of clover or other vegetation, but clover is still looking fair and, with rains soon, it should be up to the average.

Beekeepers are not worrying about prices, for it looks as if there will be a good market for all the honey produced.

The Food Controller is allowing sugar to be supplied to beekeepers really needing it, and a statement of needs along that line sent to the Food Controller brings an order on nearest wholesaler to supply the sugar required.

At this date, (May 8) many beekeepers who have lost heavily, and some beginners as well, are in a flurry over the fact that orders for packages of bees from the South that were placed months ago in some cases, are being canceled by the wholesale. Backward weather conditions are given as an excuse and, no doubt, that accounts for much of the disappointment. On the other hand, I have heard some say that they had an idea that some breeders were backing out of their contracts on account of the high price of honey, thinking that the bees would pay better to be kept for honey production than to be sold for shipment. Personally, I have no comment to make, as I know nothing about the matter, except that there are a lot of disappointed beekeepers here just now, who were hoping to restock their empty hives with bees from the South and who now seem to be in a fair way of getting none at all.

In the past I have rather favored single-packed cases instead of the quadruple or two-colony cases, but this year's experience has been in favor of the cases with more than one colony in it. Whether the difference is enough to make me discard the single cases is another question, but the cases with two colonies wintered the best this year. But wherever the colonies had abundance of good stores, of which the major part was sugar syrup, the bees wintered fairly,

regardless of what kind of case they were in, proving once more that stores are the first factor to be considered in the matter of wintering.

Many beekeepers who are affected by the latest draft ruling, that cancels all exemptions of certain ages, are finding themselves in rather bad straits, having little time to square up their business before reporting for service. Within the last few days two young men with over 200 colonies have written me as to prices they should ask for their bees, which they are forced to sell. Needless, to say, for every good reason, these men should be well dealt with and purchasers should pay all the bees are worth, or, if possible, arrange to care for them till the boys come home.

J. L. Byer.

Markham, Ont.

* * *

In Texas—With the season advanced this far, it is well to sum up the situation, as plans for the future can be made more accurately. In the Gulf Coast region the bees are in fair to good condition, altho local conditions are extremely variable. There are now about 50 to 60 per cent as many bees as there were there last year. In the southern part of southwest Texas the bees are in normal condition altho there are only 40 to 65 per cent compared with last year. In the western part of this section it has been much drier and conditions generally are not as good. The bees are in poor condition and the number of colonies is only 60 per cent of last year's number. In the irrigated section, the bees are only in fair condition, being extremely short on stores. Their number is 80 per cent of last year's supply. In west Texas the bees are in good condition. In east Texas, localities show a big variation from starving bees to bees in good condition. The bees in central Texas are in good condition, altho there are only 60 per cent of the number of last year's bees. In north Texas, conditions are worse now than two months ago, spring losses being excessive.

The effect of the drouth of last year on the honey-plants is of much concern to all. In the Gulf Coast region the mesquite and catslaw have yielded well but the horse-mint in this region has not appeared this year. The prospects for further honey flow in this region are not promising at this time. In the southern part of the southwest region, there has been a good honey flow from the catslaw and the mesquite. Here the prospects are good for a large crop of honey. In the western part of this region there is no honey flow, but the prospects for a honey crop have just been improved by rains. In the irrigated region the cold and drouth have proved a severe handicap to the mesquite flow. Unless rains come, the only



FROM NORTH, EAST, WEST AND SOUTH



flow outside of the irrigated alfalfa may come from mesquite. In east Texas the horsemint is better than for some years and the condition of all honey plants is good. The prospects are good for a honey crop in this region. The central region has honey plants that are in fair condition with the exception of horsemint, which probably will not appear this year. In north Texas the honey plants are in poor condition and the prospects are not good. Cotton, the main source of honey, is late this year.

As yet, very few offers have been made for this year's crop, and these have been with an indefinite price. The local price that will prevail for honey varies greatly, from 13 cents to 19 cents for extracted honey in cases. In small quantities, 20 cents will prevail in many sections for honey of good quality.

A development of interest to beekeepers in general has just occurred in the negotiations with an express company, relative to pound-package shipments. The company contends that the heavy losses in the past have been due to the shippers not using cases large enough or strong enough. The strength is apparently very necessary in spite of the fact that the shipper pays rate and one-half because extra care is necessary in handling this commodity. The express company further contends that some claims which have been presented are not fair at all, and future claims will be watched more closely.

F. B. Paddock.

College Station, Tex.

* * *

In Florida—Little news is available from Florida beemen this month. The big producers have shut their mouths tight, and are keeping them shut, locked, bolted, and otherwise guarded. They have made good this spring, and seem afraid that some one will jump in and rob them of their range. They need have no fears on that score, if they will give their record for the last ten years, and especially for the last two years, of partial or total failure. Florida has no great inducement to offer beekeepers. Honey production is like truck farming, in that we make bare expenses or a loss three years and a good crop one year. The outsider hears nothing about the losses; but the big money made on one crop of celery, lettuce, or tomatoes is brought to his notice, and he comes with high hopes to Florida—and is "busted."

Florida has made a big crop of orange honey, and has got a big price for it, 18 cents to 20 cents f. o. b. shipping point. Those who sold for less were too hasty, or were ignorant of market conditions. One beekeeper drove a good many miles to Apopka and sold 16 gallons at \$1.50 per gallon. If he had taken Gleanings and followed

the market prices, he would have received \$14.40 more for that one small lot, and saved the expense of hauling and bottling. In Orlando, a few weeks ago, I saw honey selling retail in the grocery stores at 50 cents per quart bottle. This honey bore the label of an extensive producer, who for the last few years has been an occasional contributor to the columns of Gleanings and who runs several apiaries on the St. Johns River. The man who sold at \$1.50 in Apopka can be excused, for he did not know any better; but there is no excuse for the other, and we can only hope that the wholesale buyers will pay him the smallest possible price for his present and future crops. Such men do not deserve the consideration of buyers or their fellow beekeepers.

As could be expected after a successful season, beekeepers are springing up like mushrooms all over Florida, and the question arises as to whether they should be encouraged or discouraged. Many of those already engaged extensively in beekeeping look with disfavor on all who are making a beginning in a small way, and will give neither advice nor help in the way of obtaining supplies. They may be right in a few cases, but personally I do not agree with them. I see too many bees in boxes and home-made hives of varying sizes, which, with a few words of timely advice and unselfish co-operation from the experienced beekeeper, would now be in standard hives and in shape to take their places in the apiary of the specialist when he buys out the small beginner, as will undoubtedly happen in very many cases. There is but a small percentage of those that start with bees that remain in the business long. They get tired of the occupation or move away and have to sell, and then it is up to the specialist to buy hives that are nothing but drone factories. I have been told that it is the beginners who spoil our markets and overstock our ranges, but my experience has been that the beginner establishes the use of honey in more homes than he can possibly supply, and the big producer gets the benefit of the other's energy as an advertiser. As to the overstocking of our pastures, there is little danger of small apiaries crowding us when they are situated more than half a mile away.

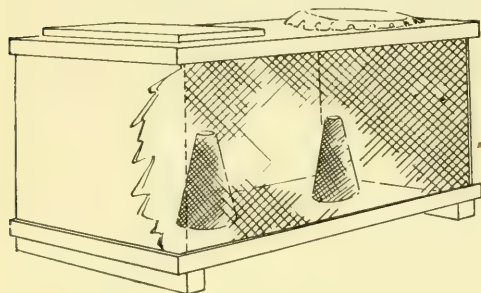
It is too early yet to state what the prospect is for a crop of palmetto honey. There is more bloom this year than in the last four years put together; but it does not appear to be yielding much. Basswood and red bay seem to be doing better, and those whose bees are near the swamps should secure some surplus. There is a good average of cotton planted in Florida this year; but whether it yields much nectar in the sandy soil remains to be seen. Harry Hewett.

Apopka, Fla.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Flytraps Made of Bee-cages.

Last spring I had several wire cloth cages that had been used to ship bees in. I was examining them one day and decided that they would make good flytraps. So, I removed all the "inside fixin's," then cut two circular pieces of screen, each about six inches in diameter. Two or three holes were punched in the center with a lead pencil, and the screens were pushed into the openings in the top of the cage



Beekeeper's Inexpensive Fly-trap.

that had been used to hold bee candy, thus forming cones leading into the cage.

The cage was then inverted and two one-half inch cleats fastened on the bottom. Shallow tin lids were placed under the cones to hold the bait. I caught several gallons of flies with one of these traps last summer.

M. L. Dodson.

Jennings, Kans.

Case of Pritchard vs. Miller.

In the reply to Dr. Warren B. Davis (page 236, April Gleanings), it is not credited that bees will dilute thick honey with water and move it over next the brood. Yet that is just what the bees always do when there is no honey coming from the fields. If the colony is fairly strong and the brood well up to the top-bars, some of this thin honey will be stored at the bottom of the super over the brood, as he stated.

Mel Pritchard.

Medina, O.

I don't know whether bees ever dilute thick honey and then move it elsewhere. I know they carry water into the hive, and that they do this even at times when it seems unlikely there is thick honey in the hive. If thick honey is in an outside comb, it would seem greater economy to transport the thick honey without diluting, and then dilute as it is used, rather than to transport the water to the outside comb and then back again.

When candied honey is in an outside comb, I believe it is a common thing for the bees to carry out the granules and waste them. Yet if the beekeeper from time to time

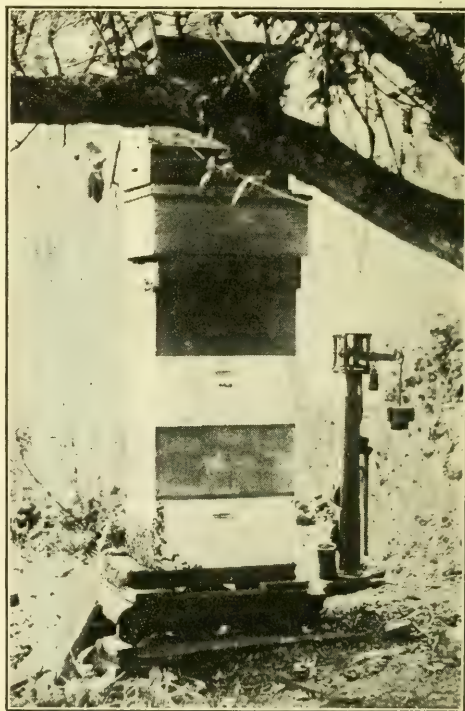
sprays with water the candied honey in the cells, the bees will utilize the honey. Now, if candied honey can thus be thinned and used, and the bees are up to the trick of carrying water to thin the thick honey, why shouldn't they carry it to the candied honey?

As the Scotch say, "I hae ma doots," but sufficient evidence might dissolve those "doots."

C. C. Miller.

A Remarkably Good Colony.

This I consider a remarkable colony of bees. It is my ten-frame scale hive for 1916. The picture was taken after the white-honey season closed and before any combs were removed for extracting. As I lacked extracting-combs I put on five section supers containing sections with empty combs, the three upper ones being eight-frame supers. The bees did not store much honey in the upper one, as it was put on near the close of the season. On July 19, when the white-honey season ended, the gross weight of the hive as shown in the picture was 54½ pounds. From June 1 to July 19 they made a gain of 370 pounds.



A Remarkable Hive.

The greatest gain for one day was 19 pounds. I weighed them every night, but did not make a daily record. In the fall they made

HEADS OF GRAIN FROM DIFFERENT FIELDS

another gain of 30 pounds, which makes a total gain of 400 pounds for the season. They were given sufficient winter stores and good winter protection and plenty of room at the right time. That is all the credit I can claim. Last season was an exceptionally good one, and only one of the nine colonies swarmed. I obtained 1,530 pounds of extracted honey from nine colonies, spring count. Three of the colonies were weak, the weakest producing about 45 pounds. The scale hive was about 125 pounds ahead of any other colony in the yard. Our main honey flow came from white clover, altho we also had some alsike and a little basswood.

Bellevue, Ia. Joseph M. Niemann.

A Roof Apiary in California.

From this picture you may infer that I am a roof buzzer. My bees gather pollen in abundance all winter, and it is very seldom that they do not carry in a little honey. There is one thing that must be guarded against, and that is mildew.



A Roof Apiary in California.

After the rain the weather is very warm and sultry, and it requires a great deal of care to keep the hives well ventilated and dry. The bees are now well up in their supers, and by the first of April will begin the swarming season. This would be an ideal bee location in regard to climate, but there is a great scarcity of honey-producing plants. The willow and bluegum are now in bloom; in April the fruit trees put forth their blossoms; but the greater surplus comes from the locust in May and June. I have done my best to encourage in my neighborhood the growing of sunflowers, which yield a surplus in July and August. Altho the honey from them is very dark amber in color, it certainly has a remarkably fine flavor.

Santa Cruz, Cal. A. Higgins.

Use of the Heavy Auto Truck.

The one-ton and two-ton auto truck will doubtless become necessary in the progressive beekeeper's equipment. There are several reasons for this. Beekeeping operations will gradually be

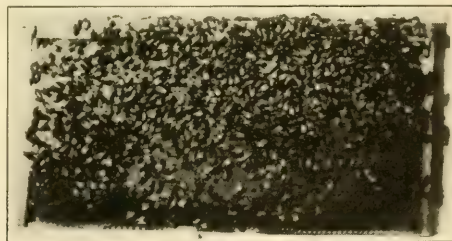
taken over by those who manage from 500 to 1,000 colonies. With an outfit of this size it is often necessary to make quick moves of large numbers of colonies. With a two-ton truck, 200 to 300 colonies can be moved 10 or 15 miles in 24 hours. Supers can quickly be moved, and a complete extracting-house can be placed on the body, if it is not found feasible to haul the honey in the combs to the home extracting-house. With a heavy truck and a light ear, all the work for a large crop from 1,000 colonies can be handled. The distance that the truck need travel in one year is small, but it will pay for itself in having it ready for the rush hauling when it comes. Wesley Foster.

Boulder, Col.

[The plan here outlined would be all right where one is carrying on beekeeping in a large way such as Mr. Foster is doing with his 1,300 colonies; but as a general proposition, a light small machine is better—one that can make frequent and quick trips and which will carry a limited amount of stuff at a time. A heavy machine, however, is expensive to operate, both from the standpoint of first cost and its slowness in making trips; and unless one has a large load to carry, it is very uneconomical. A little light Ford machine, capable of carrying 600 or 700 pounds, is much more serviceable for the average beekeeper in the average locality. Where heavy work is to be done, one can hire a two-ton truck for a particular occasion, then afterward do practically all the other work with a light machine. If, when going to and from an out-yard, one always carries something needed then or later, he can transport many tons of stuff during the entire season.—Editor.]

Brood-Combs Built Clear to the Bottom.

By using a bottom-starter, George F. Webster of Sioux Falls, So. Dak., obtains brood combs that are built clear to the bottom-bar. For these starters



Brood-comb built clear to the bottom-bar, obtained by using a bottom-starter.

he prefers the medium brood foundation cut in strips $\frac{1}{2}$ to $\frac{3}{4}$ inch wide. The bottom-starter is cemented in place with wax.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Not Due to Damp Climate.

The articles on Isle of Wight disease have been of great interest to me, as I have had some quite bad cases of it among my colonies. This is a dry climate with about 12 inches of average rainfall. Our spring is early and the bees breed from late July until early April and during the late winter and early spring there are ample honey and pollen coming in for brood-rearing. Yet the disease is here and, not even at midsummer, does it always do the disappearing trick. I have never lost a colony from the disease, but have had some very weak ones. I saw a queen affected a short time ago, but I am sorry to say that I did not mark the hive, and therefore can not tell what became of her. One colony badly affected last season is not nearly as bad this year. I make mention of the Isle of Wight disease because many writers appear to blame a wet climate and bad stores for its appearance, and believe that it will disappear with the improvement of weather conditions.

Leonard A. Chapple.
Berri, Australia.

How the Pollen Is Packed.

A few years ago I noticed an article in Gleanings in which the writer stated that it was difficult for him to detect how a bee adjusted the pollen to its legs. I have watched them many times, and will admit that on a single flower they will work and leave so swiftly that there is but little opportunity to observe their work; and it was only on a cluster of bloom that I had a chance to observe the operation clearly. Last summer, when the corn tassel was in bloom, I watched the pollen-adjusting with ease. A bee would rise from the tassel some four or five inches, and, while looking it over for ungathered pollen, would rapidly use its central feet, to which the pollen had adhered, by rubbing them dextrously on the rear legs. Having done this, the bee would alight on another unharvested bloom and continue the process. Of course, old beekeepers have seen this many times, but to the amateur this observation will give a decided thrill of pleasure.

C. E. Graves.

Blue Ridge, Texas.



THE BACKLOT BUZZER.

Are we soldiers? You bet we are. Ma says there's just two things to do. One is to stay home and raise honey to beat the Huns and 'tother is to go go "over there" and help stamp out the European foul brood.

I HAVE tried wintering in cellar, but have never had them breed up early as I have had them do when wintered outside. Hamlin Miller calls

Iowa beekeepers bullheaded who try to winter their bees outdoors. I live considerably north of him. Unless he thinks of something worse than that to call me, I shall keep on wintering outdoors."—J. B. Ratcliff, Blue Earth County, Minn.

"Bees wintered well, but are light in stores. There will be loss thru starvation, if the bees are not looked after carefully."—J. D. Oliver, Fenelon Falls, Ont.

"As the Government of the United States has prohibited the exportation of honey for the present, the prices here are merely nominal."—Adolfo Marzol, Matanzas, Cuba.

"My bees are breeding well and are 200 per cent strong for May 1. Clover looks extra good and everything looks like a big crop."—W. L. Lovejoy, Oakland County, Mich.

"I am one of the old veterans. I began taking Gleanings when it was run by a windmill, and expect to continue taking it until the Lord calls me."—J. V. Caldwell, San Bernardino County, Calif.

"The weather here has been exceptionally bad during fruit bloom, and bees got practically nothing with which to rear brood on and have used up nearly all their remaining stores."—Theo. Scharff, Greene County, Mo.

"I wintered 48 colonies and they are in fine condition now for the apple bloom which is just coming on. I enjoy working with the bees now just as I did 40 years ago when I was 10 years old."—F. M. Taintor, Franklin County, Mass.

"Will a queen leave her hive and go to another and remain there? I say yes. Last year I had a queen leave and go into a hive of blacks that had a laying queen. The Italian queen was accepted and the old one killed. Please don't let anybody call me a liar."—Herbert Coffee, Seminole County, Fla.

"Many beekeepers, if their attention was drawn to it, would be glad to give wax to help in the making of L'ambrine to heal the wounds of our soldiers without making a scar. My bees are very patriotic. They have bought Liberty bonds, and have a bank account. They are working with might and main now to help with the food supply and to make wax to give the Red Cross for the making of L'ambrine."—Miss Julia King, Liberty County, Ga.

"While there is a lot of blackberry bloom here, the bees are somewhat handicapped

BEES, MEN AND THINGS

(You may find it here)

by wet weather and cannot gather as much honey as otherwise. The bees got but little good out of apple bloom here this spring. Too cold and wet; and

they got even less out of cherry."—John A. Steel, Morgan County, Ala.

"After my experience of last season I think it more profitable for me to give my attention to the honey part of the business this season. I have decided not to rear queens or ship bees this season."—E. A. Lefingwell, Hillsdale County, Mich.

"Over 90 per cent of the bees in this county are dead. I predicted this last fall when I packed my bees for winter, as they had nothing but aster honey and mostly unsealed on account of the cold weather, and it was impossible to get sugar to feed in place of it."—S. B. Post, Washington County, Pa.

"Three of our four colonies have now been completely destroyed by wasps, and we have not found one nest. I am told by a neighbor that these small wasps make their nests in the ground, where they have hundreds of bees that are paralyzed but still alive, on which they feed."—S. J. B. Esser, Rustenberg, South Africa.

"Wife and I started in an automobile with a camping outfit from Hibbing, Minn., for Florida, on Sept. 10 last. As I am a beekeeper I was always looking for hives, and I actually believe I saw the old box gums as often as the removable-frame hives—even saw one swarm in a barrel."—G. C. Petrie, St. Louis County, Minn.

"Perhaps no other woman in the Dominion of Canada is adding to the country's food supply in quite the same fashion as Lady Vincent Meredith, wife of the president of the Bank of Montreal, as she is keeping bees in her bedroom. She advocates beekeeping for women as one way of helping to meet the food shortage."—Newspaper Item.

"My bees have made good this season. When I came down here in November, I found their supers filled with honey. Since then some of them have made 100 pounds of surplus. I run for bulk comb honey. This I consider by far the easiest and most profitable system. I sell my honey at 25 cents per pound."—Joseph H. Collins, Volusia County, Fla.

"Winter losses in New York range from 30 to 80 per cent with the small beekeeper, and 30 to 50 per cent with the larger beekeeper. Cold winds and cold cloudy weather has caused a heavy loss of old bees. Thirty per cent of colonies are out of commission for this season's honey crop. This will give us about one-half the number of colonies

for the honey crop that we had last year. Crop conditions are very favorable."—S. D. House, Onondaga County, N. Y.

"James Bachler on page 234, April Gleanings, says that by increasing the amount of honey he consumes he is bothered but little with rheumatism, etc. I have just passed my 82nd birthday; have kept bees since 1864; have not eaten two pounds of honey per year; consequently, I never had the rheumatism."—J. L. Anderson, McHenry County, Ills.

"I don't think our loss will exceed 30 per cent at the most. Have reports from a number of men in this locality that run from 50 to 80 per cent loss, and they all report bees very weak. I have fed one yard about 300 pounds of sugar. Had to feed all our bees during April. I don't think I ever saw clover look any better."—A. L. Coggsall, Tompkins County, N. Y.

"Things are looking good to us here on the Tombigbee River from a honey standpoint. The bees are working overtime on tupelo. Beekeepers report their bees in better shape, with fewer losses and more brood and honey than they have ever known before. We beekeepers here will surely get into the next Liberty loan in great shape, if Uncle Sam needs it."—J. E. Sutton, Clarke County, Ala.

"A letter by Lafayette, date of June 28, 1827, just presented to Consul-General Skinner in London as a gift to the American Government, speaks of the invention of a bee hive and of his interest in agricultural development generally. Possibly you may be able to follow this up so that we may all know to what extent Lafayette was interested in bees."—Wm. H. Ellis, Chester County, Pa.

"I am constantly receiving letters from my old customers inquiring about queens. I regret to have to disappoint them, but there does sometimes come a time in the life of a queen-breeder when it is absolutely impossible to raise queens. The fearful drouth in southeast Texas has put me almost clean out of the queen business. I have often wished that there was some way in which I could tell each and every one of my customers just how badly hit I have been."—H. D. Murry, Lamar County, Tex.

"Our pleasant March weather was followed by a very cold and disagreeable April. Three times during that month the thermometer registered 20 degrees F. Three good drizzling rains prepared the soil for what now appears will be a record breaking season for crops of all kinds. May opens up very warm, and is fast overcoming the setback by cold weather in April. The pastures present green blankets of white clover and the fruit bloom is profuse to the limit. * * The severe winter losses keep percolating thru and were not overestimated at any time. There are yet beekeepers who still try to

winter in a barn, or a shed, as well as those who leave them on the summer stands. There was an abundance of winter stores in most instances."—Hamlin Miller, Iowa.

"In his address to the beekeepers of our country Prof. Baldwin of the Department of Agriculture emphasized speeding up of all colonies to the limit of production, saying there would be an approximate sugar shortage of 20 per cent this year and beekeepers were expected to make up in part this shortage. He strongly urged the production of extracted honey, and, if not extracted, then chunk comb honey, in preference to section honey which he said, was a 'frill' and we had no time for frills when at war."—S. H. Burton, Daviess County, Ind.

"If such conditions were prevalent every year as now, this would be some bee country. The bees today (Apr. 29) are what might be termed fairly strong colonies only, but the weather is warm, and many colonies with only half to two-thirds population are full of honey and the queen is honey-bound. In my own apiary I have hives two stories, 10-frame each, from which readily could be extracted 40 pounds of honey, all from maple. Never before in my experience has there been such a flow and such weather to gather it."—E. J. Ladd, Multnomah County, Ore.

"Stress of work has given me little time to inquire into the way in which the Arabs store and collect honey here. The Sultan of Alakalla presented the mess I am in—head-quarters mess—with another tin of honey a short time ago. It was very carelessly collected, being full of young and capped brood and pollen. It was supplied in the usual round tin they make use of, about a five-pound tin, I should say. The honey itself is decidedly good, of rich flavor and savors of the date. I have examined the date-palm flower, and do not think it gives honey—not in any quantity."—R. H. Macdonald, Capt. L, 1st South Lancashire Regt., Aden Field Corps, Arabia.

"The eastern part of the Uintah Indian Reservation is in Uintah County and the western part has been organized into Duchesne County. The altitude is about 5,300 feet, and the precipitation runs from 5 to 12 inches. Most of the Indian allotments that have been improved have been in charge of white men who leased the land from the Indians thru the agency officers. The agency furnished alfalfa and sweet clover seed to sow the land with, and the leaseholders were under contract to grow and sow these crops and have a large proportion of the land producing them at the end of their lease. In consequence of this policy, which has scattered the seed of sweet clover over all of the waste ground where the water runs, the honey-producing industry is growing fast, and these two counties will soon produce more honey than all the rest of Utah."—Joab Collier, Uintah County, Utah, Mar. 27.

QUESTIONS.—

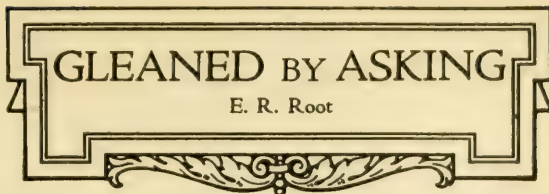
(1) If I should remove a queen from a hive for a few days, keeping her in a nucleus, could I return her to her original hive without introducing? (2) Could I take two frames of brood with queen and bees, put them in an observation hive with a screen over the entrance, keep the hive in the house for two days, and return all to the original hive? (3) If I should buy a hive of bees in our neighborhood, how shall I keep the bees from returning? It has been said that putting bees in a dark cellar for two days cures them of returning. Could I not confine them in the hive on the new stand, giving plenty of ventilation and darkening the entrance, and thus secure the purpose of a cellar? I have no cellar. (4) I have been asked repeatedly, "When do bees sleep?" As it is dark within the hive, night and day would be the same. Do their labors cease at nightfall?

Pennsylvania.

Bert Boland.

Answers.—(1) No, she would then need introducing just the same as she would to a strange colony. (2) Yes, if the weather were not so warm as to make them uncomfortable from the long confinement. But when returned to the original hive, they should be united with such precautions as one usually takes in uniting any two colonies. (3) As stated in the Talks to Beginners, in the May issue of Gleanings, the best way is to move them to a place two or three miles away. Then a few weeks later move them to the desired spot, for by that time the original location will have been forgotten. We strongly advise that the bees should not be confined to their hives for several days. This would cause the bees to so worry and raise the temperature of the hive to such an extent that it would seriously damage and probably kill the colony. (4) Whether or not we have a right to call it sleeping, we cannot say, but bees do take periods of rest, not only at night, but also during the day. Between their trips to the fields, the workers crawl into their cells and remain quietly resting for a few minutes or perhaps for half an hour at a time. The drones and queens also rest, but not usually in the cells. During the honey flow, most of the honey-ripening and comb-building are carried on during the night. And sometimes when a great deal of honey is gathered during the day, this work may continue most of the night; but usually the work stops before midnight and the entire colony rests until morning.

Question.—In "Gleanings" I read of a plan whereby a beekeeper feeds back unfinished sections, by placing them in supers, tiering them up in the honey-house, and, when all is in readiness, opening the door and letting the bees remove the honey, afterward leaving the honey-house door open for two weeks until every vestige of honey has disappeared. I found the plan works satisfactorily and with no robbing; but I fear the bees have ruined several hundred sections for me, for in their eagerness to remove the honey, they gnawed holes entire-



E. R. Root

ly thru the foundation, or bottom of the cells, and many of the sections look very ragged. Also, small particles of wax are sticking in the cells and cannot be shaken out. If I put these sections on at the start of the honey flow,

will the bees repair the foundation and remove the particles of wax, or had I better cut all the old comb out of the sections and reset with new foundation?

Pennsylvania.

Harry E. Garey.

Answer.—The plan you mention for forgetting sections cleaned is a good one for old combs, or for any combs, if there are plenty of supers for the number of colonies that have access; but if not, the empty supers should be stacked in piles about as high as one's head, and in each stack an opening left only large enough for the admission of one or two bees at a time. It is a poor plan to reset the old sections with new foundation. Old sections usually need replacing as much as the combs. If the sections are much soiled, or if the mid-rib is very badly torn, the sections should be replaced by new ones containing foundation. Otherwise, we would leave the bees to attend to small particles of wax and ragged edges, for altho the resultant sections will not be as fancy as those stored in new sections of foundation, still they are exceedingly valuable as bait combs for getting the bees started to work in the super. Bait sections at each corner or outside row and one in the center of the super would be worth much more to you than the same sections filled with foundation.

Questions.—(1) When is the best time to put new queens in hives? (2) Would the bees kill the new queen, if you took the old one out when the new one was put in? (3) How soon would the new queen begin laying?

Chas. Floding.

Ohio.

Answers.—(1) Probably the best time for introducing is along toward night during a good flow of honey. (2) If the new one is introduced by means of the mailing cage, at least 24 hours will elapse before the bees gnaw thru the candy and liberate the queen, therefore it will be perfectly safe to introduce the new one at the same time the old one is removed. (3) Usually within two days, if introduced during the summer. If shipped a long distance it may be several days or even a week before the queen recovers sufficiently to begin laying.

Questions.—(1) Describe the making of individual cakes of comb honey used in dining-cars and hotels. (2) How can I keep the different kinds of honey separate in the hives—that is, honey of different flavor, such as fruit, clover, alfalfa, white-wood trees, locust, and goldenrod? I think Allen Latham has a theory. (3) If I have a scale hive, how can I tell the amount of honey coming in, as the brood must weigh something also.

Massachusetts.

George A. Stedman.

Answers.—(1) The small individual cakes of comb honey are made by cutting the regu-

lar-sized sections of honey into the desired size and then allowing the honey from the cut cells to drain from the comb. (2) It is impossible to keep flavors entirely separate from each other. The best that can be done is to use shallow supers and carefully watch the different flows, removing supers when necessary to avoid mixing flavors. We do not recall the particular theory to which you refer. (3) Of course, the increased weight recorded is not an exact index of the amount of new honey acquired. There is some increase in the weight of brood and pollen; but there is also some loss of weight from the dying of old bees and also from the honey used by the bees. It should be remembered that a great deal of honey is used in brood-rearing—much more than the increased weight of the brood. Therefore it is quite impossible to keep a scientifically accurate record of the exact amount of surplus gathered each day.

Question.—Please suggest method of fastening foundation in shallow extracting-frames.

Tennessee. Haskell D. Ferguson.

Answer.—In order to fasten foundation into shallow extracting-frames, the frames should be held with the top-bar downward and the sheet of foundation inserted in the groove, holding the frame tilted with the bottom-bar furthest from the operator. A fine stream of hot wax and rosin, or else paraffin, should be fed between the foundation edge and the wood top-bar, cementing them firmly together. For doing this a Van Deusen wax-tube fastener should be used, or, if this is not available, a spoon with bowl bent into a narrow trough may be used.

ANSWERS BY C. C. MILLER.

Question.—Please tell me the difference, if any, between the queen bees, advertised as leather-colored Italians, and other Italians. L. S. Harner, Colorado.

Answer.—There is a discernible difference in the color found in the rings of Italian workers of different strains. In some the color is quite a bright yellow, while in certain regions they are found with a yellow much like the color of fair leather, and these are the ones that are called "leather-colored," and are preferred by a good many to those of brighter color.

Question.—When from two to five swarms come out and cluster together, I put in the combined cluster from two to five hive bodies containing frames of comb or foundation, and the bees separate themselves into their original clusters, so that before dark, they can be placed on different stands. For several years I have always been very successful with this method, but having never seen the plan mentioned, I would like to know what you think of it. Edward L'Esperance.

Answer. This is old. I remember, years ago, seeing instructions given to put, I think it was into a big box, several twigs, or branches, and then dump in the cluster of united swarms so that each queen might settle separately with her own bees. I don't remember seeing reports of failure with the plan, but failures are not usually reported. Having never tried anything of the kind I don't know what might be. I do know that

two small colonies may be at the same time in two sides of the same hive, but I don't know how long they may remain so. So there is nothing impossible about two or more queens in a cluster separating into two or more hives, each queen attracting its own adherents. Yet altho the thing is possible, if it has happened regularly with Mr. L'Esperance I should count him exceedingly fortunate, and if I should find three queens alive after 24 hours in one case out of ten it would be as much as I would expect with my bees. But as already stated, I don't know.

Questions.—(1) Is the fact that the old clipped queen remains in the hive conclusive proof that the bees have not swarmed. (2) I have one hive where the queen is a poor layer. She has twice this spring laid in queen-cells. Thinking she was merely superseding herself, I let the cells remain. I saw the new queen after hatching and killed the rest of the cells. After remaining in the hive about a week with the old queen, the young queen disappeared. The old queen is now on her third batch of cells about four days old. What is the trouble? Virginia. J. Smith.

Answers.—(1) There are exceptions to the rule that when the old queen is found present the bees have not swarmed. If a queen has her wings clipped, the colony will swarm just the same as if her wings were whole; as a rule, the swarm will return, and the queen will crawl back into the hive. In that case, finding the queen in the hive the next morning would be no proof that the colony had not swarmed. The same thing would be true if by any means the queen should be unable to fly. But by looking in the hive you would judge something of conditions by the presence of queen-cells. If you find no queen-cells present, if brood in all stages shows that there has been no interval of cessation in egg-laying, then it's a safe guess that there has been no swarming. There have been reports of cases in which the colony swarmed and returned, the queen being unable to fly, and then after the first virgin emerged a swarm went with this virgin, leaving the old queen in the hive. So it is just possible that by your question you mean to ask whether the presence of the old queen is conclusive proof that a swarm has not issued with a young queen. I wish I could be sure of the answer to that question. I have just a little doubt that such a case ever occurred. At any rate such cases are so rare as to be hardly worth considering. (2) Likely you were right in your supposition that superseding was intended; indeed the proof to that effect is quite clear, for if swarming had been intended the swarm would have gone with the old queen or else with the young one when only a day or two old, whereas you say she remained about a week. The likelihood is that the virgin was lost on her wedding trip, and that a virgin from the next batch will be more successful. Yet sometimes, when superseding is intended, if the harvest is stimulating, the bees change their minds and decide to swarm.

At the opening of this month, if our directions of the last issue have been followed, we are now in possession of good strong colonies with clipped queens. There is the equivalent of one or more solid combs of honey and seven to ten frames with brood in each hive, and most of the colonies probably have at least one shallow super of drawn combs. If necessary, frames of foundation may be given, tho combs are better if one is able to obtain them, for bees always begin work in them much more readily.

Condition of Strongest Colonies.

The strongest colonies already have brood in two stories, and the queen access to both. Also, those who desired increase have, whenever they found queen-cells started, placed on the old stand a hive containing the queen, frames of comb or foundation, and one comb with eggs and young larvæ. Above this they have placed a queen-excluder and the hive of brood with all the capped queen-cells torn out, intending in eight days to move this upper story of brood to a new location, and, after contracting the entrance, to leave them to raise their own queen or introduce one. It may now be found that such colonies, because of rainy weather, a scarcity of nectar, or the extra super room given them, have entirely given up their swarming intentions. Possibly at the end of eight days no queen-cells may be found in the hive, or perhaps queen-cells may be found with a hole torn in the side of each, showing that, for the present at least, the danger of swarming is over.

Advisability of Increase.

If the bees can be kept contented without increasing, they will be able to store much more honey than if divided. Therefore we would direct our energies to the prevention of all increase; but if some increase is desired, then we would allow it only in extreme cases. If one wishes to purchase new swarms from some neighbor (as suggested in our last lesson, page 303), now is the time to supply him with the new hives, for the swarms obtained this month will be decidedly worth while. Those obtained next month may not gather enough to winter on.

Opening Hives too Often.

There is always a strong temptation for the beginner to open his hives continually, just for the fun of it, simply to watch the little workers. This seriously interrupts the work of the colony. Necessary work, of course, must be done.

Room and Ventilation.

Doubtless the increased size of the colonies has caused the removal of all packing ere this. If not, it should now be removed and the entrance-blocks also withdrawn in

TALKS TO BEGINNERS

By the Editor

order to give sufficient ventilation. Whatever manipulation we described as work for last month, may still be profitably employed whenever the occasion

arises. Thruout this month, and until all danger of swarming is over, the colonies should be examined every seven or eight days in order to make certain that they remain normal and in a continued state of progress. They should always be provided with plenty of room in the supers and brood-chambers. During a heavy honey flow the honey comes in very rapidly. In fact, an extra good colony might store as much as a shallow super in three or four days. So one should always leave more super room than seems actually necessary. Toward the end of the season they might be piled even five or six high. We do not advise removing the honey until after the season, because the best honey is that which has been on the hives until nice and thick, and thoroly ripened by the bees.

Condition of the Queen.

Whenever a queen begins to fail she should be replaced by a good Italian queen (see "Requeening," in May issue, page 305). Still, before taking such action one should be certain that her decreased egg-laying is actually due to a defect in the queen and not to unfavorable conditions that surround her. It may be that the colony is so very prosperous, and the hive is so crammed with honey and brood, that no cells are left for the queen to lay in. Such being the case, the colony usually starts queen-cells, but not always. This congested condition may easily be relieved by placing part of the brood above and replacing with empty combs from the upper super. On the other hand, it sometimes happens that the queen ceases laying, not from an excess, but from a lack of stores.

Lack of Stores.

During brood-rearing, great quantities of stores are consumed; and unless close watch is kept the strongest colonies may easily, within a few days, be reduced to actual need. If one is so neglectful as to allow this disgraceful condition to arise, the queen will diminish, and perhaps entirely stop, egg-laying. Many drones may, perhaps, be found out in front of the hives where the bees have driven them, for drones are always sacrificed by the bees whenever the welfare of the colony demands conservation of the food supply. More than this, the unsealed larvæ may be starved and carried out at the entrance, all of which will mean a daily lessening of a pint or more of bees at the time of the honey flow. Should this take place, the colony should be fed immediately and

given a comb of eggs and larvæ in order to put them into a more normal condition.

Feeding Dampened Sugar in an Emergency.

In case of an emergency, if one has no syrup, candy, nor maple sugar, and needs to feed quickly, light-brown sugar may be dampened and given the bees, altho the bees may waste a small per cent of it. The feed may be placed on the bottom-board at the back of the hive, leaving the hive tilted slightly backward so there can be no chance for the dampened sugar or sweetened water to run from the hive and thus start robbing. When feeding in this way it is well not to give the full entrance, as this would afford the robbers too easy an entrance. After the feeding is over the hive should be left with a slight forward tilt and perfectly level from side to side.

Robbing.

Before the honey flow, or when honey, on account of unfavorable weather or insufficient nectar, is coming in but slowly, there is great danger of robbing, and during such a time no sweet should ever be left exposed; and hives should be opened only when absolutely necessary, and then closed as quickly as possible, the entrance-block being inserted until the colony seems perfectly quiet again. At such times a robber-tent is quite invaluable; but for the small beekeeper, without question, the better plan would be to wait for more favorable conditions before handling.

Opening of Flow.

In clover localities one may usually count on the beginning of the flow taking place from seven to ten days after the first few blossoms are discovered. At this time those colonies that have quite a few bees in their first super should be given a second one—that is, all the best colonies should at this time have the equivalent of one deep super; and until a week or so after the opening of the honey flow we think it a good plan to allow the queen access to two stories, keeping some brood in each.

Spacing of Frames in Supers.

If the supers contain foundation, the frames should be closely spaced until the foundation is drawn out. After that at least one comb should be removed and the extra space evenly divided between the combs. This will give a little more room for storing honey, and will result in combs so nicely bulged that uncapping at extracting time will be a real pleasure.

Natural Swarming.

In this article we have explained how to manage the bees in such a way that it would be perfectly feasible to leave them during six days in the week and still feel certain that the bees were well cared for. Some of those, however, who intend to be always within sight and hearing of the apiary may prefer to obtain their increase by means of natural swarming. If so, do not raise brood nor tear down queen-cells, but just allow the first swarm to issue, which they will probably do as soon as the queen-cells are

sealed. If one happens to be near the hive just before the swarm leaves, he may notice unusual activity of bees running about the front of the hive; and if the hive is opened, there he may find great excitement and a busy rushing of bees here and there in every direction. In a few minutes the bees begin pouring from the hive by thousands until the air is filled with a great cloud of humming bees. Usually they cluster on the branch of a tree not far from their hive, waiting to make certain that the queen is with them before they leave for their new home which has already been chosen by the scouts sent out several days previously.

If the queen has been clipped, as described in our May lesson, she will be found climbing helplessly about on the grass out in front of the hive attempting to join the swarm, which, of course, she is prevented from doing on account of her clipped wings. After caging her in a spiral queen-cage, or in a small box punched with holes so that she may have plenty of air, put her in the shaded entrance of the new hive of combs or foundation which has been placed on the old stand facing in the same direction as the original hive. This hive should also contain one comb with young larvæ (very important in case of a queen with wings), and above it should be placed the supers removed from the old colony, for the new colony will now go to work with renewed vim, while the old colony will be composed mostly of young bees, and will probably be without a laying queen for a week or more, and will not be in condition to store any surplus for some time.

In a short time the bees will discover that the queen is not with them, and will, therefore, return to the hive. After they have begun running in nicely the queen should be liberated and allowed to run in with the rest. In order to prevent after-swarms from the old hive, all queen-cells except one may be torn down, and in a week or so the colony examined for eggs. If none are found, it will either mean that the queen has not yet begun laying, or that she was lost in mating, and the colony is queenless. In either case the best thing to do is to give them a frame containing eggs and young larvæ. If a queen is in the hive, she will probably begin laying all the sooner because of the presence of the larvæ; and if the colony is queenless, they will undoubtedly begin queen-cells, in which case a ripe queen-cell could be given them in a cell-protector or else a good queen be introduced.

In order to have a swarm that is accompanied by a queen with wings, the colony should be shaken into a basket attached to the end of a pole and placed on the ground in front of the entrance. If they do not seem inclined to enter, shaking them on to the ground will usually start them. Generally a few of the bees take wing and return to the clustering place, so that it may be necessary to take them from the tree several times in order to make certain that the queen is also captured.

MY good friends, I am in trouble. Perhaps I should change it, however, and say I am a good deal worried. The thing that worries me is an article in the magazine entitled *Good Health* for March. I think the publishers will excuse me if, under the circumstances, I copy the article entire. It is from our good friend

Dr. J. H. Kellogg, who has been an advocate of a vegetarian diet for lo, these many years. I have met Dr. Kellogg once or twice, and I visited the Battle Creek sanitarium and wrote it up years ago in these pages. Perhaps I should explain that for four years of my life I was a vegetarian. Of course I ate butter, cheese, eggs, and milk, but no meat. Again, later in life when my health failed on account of being too much indoors, I lived on a diet of lean meat—mostly beefsteak for 18 weeks—not a crumb of bread nor a taste of fruit. Thus having been on both sides of the fence in the way of actual experience, I think I can consider the question understandingly. Below is the article from *Good Health*:

HOW TO MAKE FOOD PLENTIFUL.

The high price of food stuffs is not due to food scarcity.

There is food enough in the country at the present moment to feed every man, woman, and child in the United States, England, and France for two years or more.

Food is plentiful.

Then what's the matter?

There's only one thing the matter.

The cattle and pigs are eating up our food stuffs.

Probably most of our readers are not aware of the fact that only ten per cent of our 3,000,000,000-bushel corn crop is eaten by the people of the United States.

What becomes of the rest of the great corn harvest?

Some hundred million bushels are made into beer and whiskey. A few million bushels are exported, but the greater part is eaten up by fattening steers, sheep, and hogs.

It is true that these animals are fed largely on grass and roughage; but before being shipped to market they are always fed up for three to six months on a ration consisting largely of corn. During this fattening period of six months a steer eats twelve to fifteen pounds of corn daily. A sheep eats one or two pounds and a hog two to four pounds.

According to Prof. Henry, dean of the Agricul-



Give us this day our daily bread. —MATT. 6:11.

And God said, Behold I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for meat. —GEN. 1:29.

Prove thy servants, I beseech thee, ten days; and let them give us pulse to eat, and water to drink. Then let our countenances be looked upon before thee, and the countenance of the children that eat of the portion of the king's meat; and as thou seest, deal with thy servants. —DAN. 1:12, 13.

tural Department of the University of Wisconsin, a three-year-old fat steer has eaten 4,000 pounds of milk and 6,000 pounds of concentrated food of which at least 4,000 pounds may be reckoned as corn, a daily average of five pounds.

The average daily ration of a sheep may be estimated as at least one-half pound of corn, and of a pig as an average of one pound for its whole lifetime.

According to the U. S. Bureau of Crop Estimates, there were in the United States January 1, 1917, 40,

800,000 cattle other than milch cows. A simple calculation will show that these domestic animals consume each year corn or other equivalent grain in the following amounts:

	Bushels of corn
40,800,000 cattle consumed...	1,000,000,000
48,483,000 sheep consumed...	147,000,000
67,453,000 hogs consumed...	820,000,000
156,936,000 animals consumed...	1,967,000,000

Let us suppose that domestic animals are put upon a war ration of one-half the usual amount of grain, the annual consumption will still be a billion bushels of corn or 60,000,000,000 pounds, or enough to supply one and one-half pounds of corn daily to 109,000,000 people for a year. Such a ration would furnish 2,400 calories daily, sufficient for the average person.

It is evident, then, that the high price of corn, and consequently the high price of meat, and we may justly add the high prices of most other foods, are the result of the diverting of food to the feeding of cattle, sheep, and hogs.

It is true that the flesh of these animals has food value; but it is small compared with that of the corn consumed to produce it. According to Prof. Henry, about five pounds of corn is required to produce one pound of beef; and the beef, being more than two-thirds water, one pound of it has only about half the nutritive value of a pound of corn. So, for ten pounds of corn fed to a steer we get back only one pound of water-free food.

Now, what is it that worries me? It is the closing paragraph in Dr. Kellogg's article given above—the closing sentence, in fact, that we must feed ten pounds of corn to a steer to get only one pound of meat food. And according to Prof. Henry, above, one pound of meat has only about half the nutritive value of one pound of corn. Just now, a large part of my diet is a mush made of cornmeal, oatmeal, and wheat ground up in a little home mill. This when made into a mush, and set in the oven before each meal, is eaten with butter and honey, (or maple molasses for a change) and is, I think, the most satisfying and delicious food I ever ate. With a cup

of milk right by my plate to take a sip of at intervals I take "real comfort;" and I can do more work, or certainly just as much, as on a diet of the best beefsteak. Occasionally I have an egg with my mush and honey and milk. For the last meal of the day, at 5 o'clock, I have baked apples and milk. During the last winter I have changed from raw apples to baked apples because they seem to be more digestible, and I am saved the trouble of paring the raw apples as I used to do; and when it comes supper time I can, from the bottom of my heart, thank the Lord for such a delicious evening meal as baked apples and milk, with a little bit of cheese for an appetizer. Of course I have other fruit according to the season, to take the places of apples more or less; but baked apples are the great standby.

Once more, why should I worry? Well, to get right down to the point I feel worried because it seems every man, woman, and child *must* admit that Dr. Kellogg is right or largely so. A pound of steak just now would cost, say, 30 cents; but a pound of corn, even at the present inflated prices, would cost only about three cents, and yet we are told the beefsteak has only about *half* the nutritive value of a pound of corn. Therefore feeding the corn to a steer, costs us 20 times as much as to eat the corn ourselves instead of feeding it to the steer. Perhaps there is some exaggeration in this. But there is a large bit of truth that we *cannot* get around.

Then there is another thing that troubles me. I have all my life been quite a "chicken man." Would the same kind of reasoning apply to feeding corn to chickens in order to get eggs, instead of eating the corn in the first place? Some of you folks can figure it out. Let me digress a little.

My vegetarian-diet experience was when I was in my teens. I was keeping chickens. My chickens were my pets. They would run to me and eat out of my hand, and sing their songs of praise and thanksgiving with trusting confidence close to my side. During the last winter I have had about 50 Eglantine pullets. I have seen many of these Eglantines come from the nest where they have laid about their first egg; and I have stopped and listened to their juvenile cackle; and I have said to myself, "If there is any music from any feathered songster equal to a pullet's first cackle, in the way of sending a thrill of joy and thanksgiving, I have never found it." Now, how much *money* would it require to induce me to take that beautiful, innocent

cackling pullet and *chop her head off*, that I might have a "chicken dinner"? Well, away back when I was a boy I decided in my own mind that I was going to get along without depriving any animal of its precious life, given by the great Creator, in order to satisfy my appetite. I have heard it argued pro and con for more than 60 years in regard to vegetarian and meat diet, so we need not take time or space to go over it here.

The dear Savior, when he made a little repast for his followers, gave them fish and honey in the comb. It has been argued from this incident that *he* set the pace for at least a mixed diet. Well, it has just occurred to me that we do not feed our corn to the fishes in the sea. Years ago, when German carp were my hobby, I did talk about (and practice) not "corn-fed" *beef* but "corn-fed" *fish*. But as a rule, where we use corn to produce beef, mutton, or pork, we do not waste the corn in producing fish food. This terrible war is teaching us many lessons. If it should happen that the whole wide world will be forced to eat less meat, I think it will certainly be a profitable lesson for the world. Our great doctors are almost unanimous, if I am correct, in saying the health of humanity would be better with *less* animal food, especially the diet that necessitates taking life to get meat. Of course we have got to have milk—that is, I take it for granted that milk is a necessity for babies; but, if I am not mistaken, everybody agrees that mothers' milk is away ahead (for the health of the little strangers entrusted to our care) of milk from any other source. Possibly goats' milk might sometimes be an exception. I feel satisfied just now that it would be better for us to use much less animal food, on account of high prices at the present time, and the waste of grain, as Dr. Kellogg puts it. If he is not exactly right about it, he is largely right, and there is no use in trying to dispute it.

Mr. Collingwood, of the *Rural New-Yorker*, thru that same *Rural* has been a long-time friend of mine. I met him and had a chat with him just once. Well, he talks so much about baked apples that I owe him a vote of thanks for having largely influenced me to get on the baked-apple diet—at least for the last meal of the day. Right here I wish to make a clipping from the Hope Farm Notes in a recent issue. He writes:

MILK.—The average working man will say that he must have meat in order to keep up body and strength. Do you know that from experience, or are you guessing at it? After trying all sorts of food

and diets, I am satisfied that cottage cheese and entire wheat will fully substitute for meat in the diet of any well-matured person. I am willing to make up a little contest with any man of my age and work it out. The other man may eat all the meat he wants. I will balance my ration with milk, cheese, and eggs. We will stand for an examination before we begin, and have careful records made of what we do, how the body stands it, and the cost. I have seen so many men who felt that they could not live without eating great quantities of meat "come back" after being forced to give it up that I feel very sure of my ground. The scientists tell us that a quart of good milk contains as much food as a pound of beefsteak. Many a man will listen to that and smile. Then he will sell the milk for five cents or a little more and go and pay 30 cents for the beef. I know the scientist is right, and I think this plan of selling all the milk and paying five or six times as much for meat is one big trouble in the dairy business. . . . A farmer will sell three cents' worth of grain and pay 12 cents for the same kind of grain, crushed or partly cooked, and packed in a little box. By using a small hand grinder, that farmer could prepare the grain into a better "cereal" than he can buy.

During the past winter, as I have been telling you, I have been out in the open air from daylight till dark, with hardly a day's exception; and I have carefully noted what food stayed by me best for my work in the garden. I very soon informed Mrs. Root that when I had the oatmeal mush I have mentioned (with the honey), I held out better than on any other diet—better than when I had fish or meat without the oatmeal. But if oatmeal were omitted entirely, I felt used up before dinner time; and much the same experience came with cottage cheese. The latter seemed to be a very important part of the menu in order that I might do a lot of work and not become tired. You will notice Mr. Collingwood seems to agree with me entirely.

I now wish to call particular attention once more to the importance of having a little grinder in every family, to cut off the expense that comes between producer and consumer; and I am just now planning to have a little patch of wheat in my garden and give it "high-pressure" cultivation and fertilization as I have been doing with potatoes. This wheat flour is so difficult to get just now, what is to hinder not only grinding our own wheat flour but growing it in our "war gardens?" Threshing it out in small quantities at home, may be something of a problem; but I am pretty sure I can cut off the heads of grain, put them in a stout bag, and pound out the wheat with a club, just as we have been doing with beans in our home garden for years past.

Now, friends, are we not ready to show Germany that with "pulse to eat and water to drink," as did Daniel, that we are more than a match for even Satan himself?

Later.—After the above was in type it

occurred to me our Ohio Experiment Station had made some experiments in regard to the cost of beef, and I wrote my "long-time friend," Prof. Thorne. Below is his reply:

Replying to yours of May 1, I would say that it is generally assumed that it takes about 10 pound. of grain to produce a pound of beef. In some of our experiments we have produced a pound of increase in liveweight from seven pounds of grain; in others it has required eight and from that up to 10, owing to how the grain is fed; so that there is no doubt that the necessary cost of human nutrition is greater when meat enters largely into the diet. On the other hand it is quite likely that we use more grain than necessary in producing meat, and that a larger portion of our meat might be made from the waste products of our crops. I regard this line of investigation as one of the most important now before the Experiment Stations; that is, to see how we may reduce the grain and increase the other constituents of the ration in producing meat.

While the Chinese and East Indians have got along with less meat and less milk than we are in the habit of using, yet I believe that it is generally held by those best qualified to judge, that we cannot afford to attempt to do without milk, for the sake of our children.

Yours cordially,

CHAS. E. THORNE.

Wooster, Ohio, May 3, 1918.

Director.



The electric windmill with the builder of the tower (Mr. Leon Wheeler) on the platform, 45 feet up. The highest point of the wheel is 60 feet from the ground.

THE ELECTRIC WINDMILL AND SOME MORE PICTURES.

Mr. L. C. Kaiser, who has charge of the electric windmill in my absence, reports even better success in charging the storage batteries than we had when I left. The hydrometer I had been using proved to be defective, so that he really had a better charge in the batteries than the instrument indicated; and while 1275 degrees is said to be a full charge, he had one set of batteries up to 1300. The first picture shows our neighbor Wheeler, who built the tower, standing on the platform above. His residence, just over the fence from our own, is shown below with the ladder leaning against it.



Mr. Wheeler, Mr. Sisson and "A. I. R.," with a glimpse of the tower at its base.

The second picture shows Mr. Wheeler once more, who, by the way, is the author of the article in this issue on the Florida everglades. The good friend who stands between Mr. Wheeler and myself is a resident of North Dakota, and an acquaintance of our good friend Manikowske.

FLORIDA EVERGLADES, LAKE OKEECHOBEE.

The writer of the following came from Michigan with his wife and three children. He has been quite a successful beekeeper, is now located close to our home, and has built, unaided, the wooden tower for our electric windmill. With this preface we will listen to our good friend Wheeler.

THE EVERGLADES AND MOORE HAVEN.

Moore Haven is very much in the public eye of late. So many stories are told of the place, the soil, and the crops, that many are wondering just what is true and what is not. I have made two trips there lately, and, as I am not interested in any land projects there and do not have any other interests in the place, I can write an unbiased account of the things I have seen.

The trip across the prairies from Arcadia is an interesting one. The distance is 70 miles, without a house on the way, and across almost unbroken prairie with occasional sloughs where one has to drive thru water. The road is not muddy usually, as it almost always has a hard sand bottom. Birds

and animal life abound and the plains are everywhere dotted with the inevitable range cattle.

The town of Moore Haven is built on a canal just a few miles off the shores of Lake Okeechobee. It is, like most towns of the mushroom type, largely built up of temporary wooden buildings. Some brick and cement structures are going up, and more would undoubtedly be built, if material could be secured. The town has for its chief executive a beautiful young woman, who is at present one of its chief promoters. She is Mrs. O'Brien, formerly Miss Howitz, and is almost idolized by her people.

One of the chief drawbacks to the town up till now has been the lack of a railroad; but this objection will soon be gone, as the track has been laid to within four miles of Moore Haven, and will probably be completed before this article is put in type.

Like most new places, especially where the population is made up of homeseekers from all parts of the country, the people are very cordial and hospitable.

But the thing of vital interest here is the soil, which is of the kind that not only needs no fertilizer but is in itself a fertilizer of real value. Dr. Wiley has pronounced it to be actually worth \$9.35 per ton for fertilizer. Then it is peculiar in that it needs no cultivation. In fact, it seems to do better when not cultivated. About all there is to do after the crops are planted is to pull out the occasional careless weeds which grow there. These weeds grow to be four or five inches in diameter up to fourteen or even eighteen inches, and are so strong that a full-grown man can stand in their branches. Naturally these weeds are not allowed to grow in cultivated lands.

The water is very fair in the deep wells, but has a pronounced taste of iron in it. Many shallow wells are used; but these are dangerous, as such wells always are. Sickness is very little known, the few cases being mostly traceable to drinking canal water or that from very shallow wells.

Some of the interesting things to be seen on the big farms are the great tractors hauling as many as six large plows at once, and as many as forty disks when disking. Great pulverizers are used to tear out the roots and put the new ground in condition to work. These throw the roots all on top of the ground, where they are burned. This soil is different from any other mulch soil I ever saw, for it will not burn—probably because it is so full of moisture. One can dig at any time and find moist earth within an inch or two of the top.

The farmers grow almost everything in the line of crops, altho having the poorest success with celery. I have farmed or lived in a farming community all my life, and have been in several States, but have never seen cabbage to equal what I saw there. The same thing can be said of onions and many other crops. Frost damage has made many fields look ragged; but wherever there was no frost the crops are tremendous. There is one field of cabbage seven miles out from Moore Haven, of from 300 to 400 acres, from which they are hauling two or three carloads a day, and cannot begin to keep up with the growth. The manager, it is said, has refused \$100,000 for the cabbage in the field. I saw one onion field of 150 acres, and many from 20 to 40 acres. As the ground needs no cultivation, a second crop is often planted between the rows of the first when it is half matured, so that much of the time two crops are growing at once on the same field. The yields are enormous—so great that I dare not tell you the amounts for fear you would not believe me. One must see with his own eyes or else he cannot believe the reports about Moore Haven crops.

I drove down the southwest side of the lake to where the Miami canal enters it; and the further

I went, the less evidence of frost appeared. During the last few miles everything was green, even to eggplants, peppers, and other tender plants. Here we entered a very fair imitation of a tropical country, with its avocado pears, its pineapples, guavas, etc., all green and uninjured by frost. The hotel grounds on the canal are certainly beautiful with their great variety of tropical plants and trees. Besides those mentioned above were the royal palms, Australian pine, fig trees, rubber trees, traveler's palm, eucalypti, and many others. Peaches were forming, and some pineapples were still on the plants.

The story of the trip would not be complete without relating our experience with alligators. The first one I saw was about 4½ feet long, lying asleep on the ground; and as it started to run into its hole I caught it by the tail. Another man placed in its mouth a stick which it seized in a viselike grip and in this way we carried the creature out of the swamp to where the rest of the party were. We thought to keep it alive, but finally decided to kill it. A native showed us just how to strike it an effective blow. This proved to be lucky knowledge later when a large alligator, nearly eight feet long, was found in the road, having been run over by the front wheels of a car. We were out of the car at once and after him. I picked up a spade and soon overtook him, when he turned for fight. He was indeed a formidable-looking antagonist, standing straight up on all four legs, back arched and head held low, while his powerful tail slashed viciously thru the air. A sudden dash and a quick strong blow, which went true, brought him to the ground, when I killed him after a lively tussle. We then roped him to the car and dragged him home.

LEON C. WHEELER.

Bradentown, Fla., Feb. 15, 1918.

Since the above article was written the railroad has been completed, and I am told it is doing quite a business, especially in carrying the crops away. The Florida papers every week or oftener are telling us of the wonderful things being done at Moore Haven—a great hotel for one thing, and other important buildings. In regard to getting great crops without fertilizer or cultivation, I confess I was at first a little skeptical about it but since then I hear from different sources that it is at least largely true. No doubt there are drawbacks to the locality that, for various reasons, are not mentioned; but we shall get them eventually. With the present demand for everything that will satisfy hunger, no doubt there are wonderful opportunities in this new region that is just being opened up.

SWEET CLOVER AND WHAT IT DID, FOR 10 ACRES OF CORN.

We clip the following from an article in *The Ohio Farmer* of March 23, written by E. Simmonds, Hamilton County, O.: (Where are the chaps now, who stubbornly insisted sweet clover would "ruin the farm"?)

SIMMONDS PLOWS DOWN SWEET CLOVER.

"By growing 65 bushels of corn to the acre I had been winning the Farmers' Week trip from Hamilton County in a local contest," says Mr.

Simmonds, who has been a corn specialist for 37 years. "My land," he continues, "is a sandy loam on a second bottom slope and, of course, originally fertile; but due to 100 years' continuous cropping the yields were slowly decreasing each year.

"I followed the 1915 corn crop with rye; sweet clover was sown the next spring and a crop cut for hay following the rye harvest. About 10 acres had been sown to sweet clover, 200 pounds of fertilizer being used on the soil at the time of the rye planting. In the spring of 1917 I decided to use the 10 acres for the state contest. The season was late and not a furrow was turned until May 17 when the sweet clover was at least 24 inches high. With a good job of plowing I turned it completely under and planted the plot on May 22.

"Two weeks later the sweet clover turned under was almost completely rotted and the corn was growing rapidly. The corn grew so fast that I only got over it twice with a sulky cultivator, and a wet season later on prevented further working with a single-row cultivator.

"The land which received no clover crop produced its average yield of 60 bushels; but the 10-acre plot went over the 1,000-bushel mark, matured earlier and stood up better."

Simmonds grows Boone County White from a strain which he has been developing for a number of years. He selects seed from the standing corn. The 10-acre plot was drilled with graded seed, a grain being dropped every 15 inches.

The above is indeed a wonderful testimonial of the possibilities in regard to sweet clover, but in *The Ohio Farmer* for April 7 we find the following from the same writer. (Think of it! Corn at a cost of 19c a bushel, when it is quoted on the market at \$1.75 or over!)

COST OF PRODUCE CORN.

In your paper of April 6, H. C. Bothwell takes issue with me on my being able in 1917 to produce corn at 19 cents per bushel. As Mr. Bothwell is not the only gentleman who doubts the correctness of my figures, I am sending to you herewith detailed explanation of my costs.

As this corn was raised in a contest under the auspices of the Ohio State University a record sheet was furnished us to be used for keeping our expense account, in which the prices were specified—15 cents per hour for man labor and 10 cents per hour for horse labor.

Before I give my tabulated account, permit me to state that on May 16, 1917, I plowed under a sweet clover sod and not a weed showed itself in my field; I also had a perfect stand of corn, and had no occasion therefore to use a hoe.

On another page of this same *Ohio Farmer*, L. L. Rummell, Ohio Experiment Station, commenting on the above, says:

Sweet clover turned under was the only plant food supplied to the crop of Mr. Simmonds. He regarded the fertilizing elements carried in the legume sufficient to meet the needs of a heavy corn crop following, and he applied no manure nor fertilizer.

Later: I find in the *Ohio Farmer* for May 11, four different letters from (as I take it) expert farmers, in regard to corn at a cost of only 19c a bushel. They insist it should be two or three times that figure, but, it I am right, not one of the four plowed under a heavy growth of sweet clover.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Fancy clover honey for sale by
Jos. Hanke, Port Washington, Wis.

Beeswax bought and sold. Strohmeier & Arpe Co., 139 Franklin St., New York.

FOR SALE.—New orange-blossom honey in new round jacketed 60-lb. tin cans at 15c a pound.
G. H. Adams, Gen. Del., Palmetto, Fla.

6,000 lbs. choice clover; 3,500 lbs. white aster, free from dregs; first-class in every respect, packed in bright 60-lb. tins, two in a case. Make me your best offer F. O. B. my station. If interested I will answer.
H. C. Lee, Brooksville, Ky.

FOR SALE.—Finest table honey put up in one 50-gal. new barrel, and four 30-gal. barrels; 20c per pound, F. O. B. Bradentown, Fla. To any one who means business I will gladly send a large sample.
M. F. Perry, Bradentown, Fla.

HONEY AND WAX WANTED

Small lots of off-grade honey for baking purposes.
C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

WANTED.—Comb and extracted honey.
J. E. Harris, Morristown, Tenn.

Cash at your bank for carlots and less of comb and extracted honey.
Wesley Foster, Boulder, Colo.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.
Superior Honey Co., Ogden, Utah.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston.
M. V. Facey, Preston, Minn.

WANTED.—Extracted honey, carload or less quantity. We can supply 5-gallon cans for your crop if needed.
Hoffman & Hauck, Richmond Hill, N. Y.

WANTED.—Extracted honey, all kinds and grades for export purposes. Any quantity. Please send samples and quotations.
Betancourt & Leganoa, 59 Pearl St., New York City.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices.
A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—Pure maple syrup in one-gallon cans at \$2.50 per gallon. Six gallons or more \$14.
The M. C. Silsbee Company, Avoca, N. Y.

Beekeepers, let us send you our catalog of hives, smokers, foundations, veils, etc. They are nice and cheap.
White Mfg. Co., Paris, Tex.

BASSWOOD AND EVERGREEN TREES.—
Send for list. Hansen Nursery Co., Niles, Mich.

FOR SALE.—Supers, frames, fixtures, etc., cheap.
S. B. Hussey, 113 E. Cottage Ave., Haddonfield, N. J.

FOR SALE.—The Severin steam-melter and separator combined. Saves time, labor and money.
F. J. Severin, Imperial, Cal.

FOR SALE.—A lot of second-hand honey kegs and 60-lb. cans, two in a case, 500 4¼x4¼ sections. Write for prices.
J. H. Taylor, Parksville, N. Y.

FOR SALE.—50 or 100 Root regular shipping cases for 4¼x4¼ beeway sections, with glass. Never been uncrated.
F. W. Morgan, Deland, Ills.

FOR SALE.—I still have a supply of sweet clover seed and some spring-hatched queens for June delivery.
E. C. Bird, 1032 Pine St., Boulder, Colo.

Pennsylvania Distributors for Root Bee Supplies, save time and transportation expense on all standard hives, sections, etc., at catalog prices.
Prothero, Bailey & Goodwin, Dubois, Pa.

FOR SALE.—100 good second-hand zinc-excluders for 10-frame L. hives, at 31c each, delivered south of the Ohio River, or express paid that far. Free from disease.
F. M. Baldwin, Mt. Vernon, Ga.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

Bargain Prices.—75 ten-frame iron-end super boards, 12 cts. each; 1,800 No. 1 sections, 3½x5½ at \$4.00 per 1000. One 12-inch foundation-mill for medium brood, good condition, \$12.00.
I. A. Stringham, Glen Cove, N. Y.

FOR SALE.—150 Danz. supers for 32 4x5 plain sections for 10-frame hives and 150 supers for 28 4x5 plain sections; fits either 8- or 10-frame hive; supers complete, section-holders, fences and springs, all in good condition; 35c each. F. O. B. Spring Valley, Wis.
C. H. Harlan, Spring Valley, Wisc.

FOR SALE.—Owing to the water getting in my bee cellar and drowning all my bees, I will offer my entire equipment, consisting of 8- and 10-frame L. hives with 100 extractor supers, with bright extracting combs. Will sell regardless of cost. No disease. Satisfaction guaranteed.
Wm. H. Keyser, Rt. 7, Schenectady, N. Y.

FOR SALE.—100 cases of 15 oz. round glass jars, with screw-cap, put up in corrugated re-shipping cases, 2 doz. to a case, \$1.00 a case, in lots of 20 cases or more, F. O. B. Elizabeth. Also 2-frame Cowan reversible extractor for Hoffman frames, \$14.00. T. Edward Diener, 28 Jacques St. Elizabeth, N. J.

FOR SALE.—2000 drawn combs in 8- and 10 frame hive bodies: hive bodies included, 25c each; 8 and 10 extracting supers with empty frames, 80c and \$1.00. A few with drawn combs, add 5c per frame for drawn comb. Bees in 10-frame lives, \$10.00 per colony. F. J. Rettig & Sons, 445-485 West Canal St., Wabash, Ind.

WANTS AND EXCHANGE

WANTED.—Four-frame honey extractor, comb pockets 12 inches wide.
Allenville Apiaries, Allenville, Ala.

WANTED.—A Buffalo robe. State size, condition, and price in first letter.
Cecil Shepard, Rochester, N. H.

WANTED.—A good honey location to start a line of apiaries. Will give suitable reward for the best reliable information.
D. E. Lhommeieu, Colo, Iowa.

WANTED.—Root Buckeye chaff hives, with packing under bottom, in good condition. With or without Hoffman frames. Write full description and lowest cash price. Edgar Williams, Pierpont, Ohio.

WANTED.—Full colonies of bees on Hoffman frames, Italian preferred, free from disease, near New York city. J. G., care of The A. I. Root Co., 139 Franklin St., New York City, N. Y.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

WANTED.—100 2-lb. packages of bees with untested queens immediately, or would consider 2-frame nuclei if all brood sealed. Name lowest price and date can ship in first letter or wire.

A. J. Heard, 284 Vancouver Ave., Detroit, Mich.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

AUTOMOBILE REPAIRS.

AUTOMOBILE owners should subscribe for the **AUTOMOBILE DEALER AND REPAIRER**; 150-page illustrated monthly devoted exclusively to the care and repair of the car. The only magazine in the world devoted to the practical side of motoring. The "Trouble Department" contains five pages of numbered questions each month from car owners and repairmen which are answered by experts on gasoline-engine repairs. \$1 per year. 15 cents per copy. Canadian subscriptions, \$1.50. Postals not answered. Charles D. Sherman, 107 Highland Court, Hartford, Conn.

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\$2,000 cash takes a fine Florida farm of 10 acres, all improved, including stock and crops; also 60 colonies of bees in modern hives.

C. Mack, Mannville, R. D. No. 1, Fla.

Fully equipped apiary for 400 colonies of bees; hives with drawn combs, supers with sections filled with full sheets of foundation, season's supply of containers, winter cellar, buildings, etc. Write B. F. Johnson, 7901 Franklin Ave., Cleveland, Ohio, for full particulars. Location Haileyburg, Ont.

VIRGINIA AND NORTH CAROLINA FARMS \$15 PER ACRE and up. Easy payments. Fruit, Dairy, Stock, Climate, Schools, Churches, Roads, Markets, and Neighbors of the best. Get our Farm Lists, magazine and other interesting literature, all free. Address F. H. LaBaume, Agri. Agt., N. & W. Ry., 246 N. & W. Bldg., Roanoke, Va.

BEAUTIFUL HOME FARM, improved rich soil, well located, good buildings, 100 colonies of bees, up to date; best honey-producing location in the State; not crowded; average for past 7 years, 105 lbs., 5 acres of ginseng and goldenseal, all ages, in fine shape; half artificial shade, half natural. Will sell a part or all of seng-seal. A wonderful opportunity—a bargain. Reason for selling, poor health. W. M. Penrod, Ronneby, Minn.

A small California farm earns more money with less work. Raise the crops you know about—alfalfa, wheat, barley, etc.—also oranges, grapes, olives, and figs. Ideal for dairying, pigs, and chickens. No cold weather; rich soil; low prices; easy terms; good roads, schools and churches. Enjoy life here. New comers welcome. Write for our San Joaquin Valley, also Dairying and Poultry Raising illustrated folders free. C. L. Seagraves, Ind. Con. A. T. & S. F. Ry., 1927 Railway Exchange, Chicago.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, R. D. No. 3, Vincennes, Ind.

Try Phelps' Golden queens and be convinced, \$1.00 each. C. W. Phelps, Binghamton, N. Y.

Italian Bees and Queens; write for circular. Ira C. Smith, Dundee, Ore.

FOR SALE.—Untested Golden Italian queens, 75c each. J. F. Michael, Winchester, Ind.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Courtland St., New York.

FOR SALE.—1918 Golden Italian queens; price list free. Write E. E. Lawrence, Doniphan, Mo.

When it's **GOLDEN** it's **PHELPS**. Queens, \$1.00. C. W. Phelps & Son, Binghamton, N. Y.

"**SHE SUIT ME**" Italian queens; \$1.00 from May 15th to Oct. 15th. Allan Latham, Norwichtown, Conn.

Italian queens, The **HONEY GATHERERS**. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

FOR SALE.—Fine Italian queens at 90c each; \$9.00 per doz. Ready April 15, safe arrival guaranteed. T. J. Talley, Greenville, Rt. 3, Ala.

Get my price list on queens and bees, the best three-band and five-band honey gatherers. H. A. Ross, Evansville, Ind.

Hardy Italian queens. The busy kind, no culls. Must please. \$1.00 each. W. G. Lauver, Middletown, R. D. 3, Pa.

FOR SALE.—Three-band Italian queens. Untested, \$1.00; 6, \$5.00; 12, \$9.00. Tested queens, \$1.50 each. Robt. B. Spicer, Wharton, N. J.

Try **ALEXANDER'S** Italian queens for results. Untested, each, \$1.00; 6 for \$5.00; \$9.00 per doz. C. F. Alexander, Campbell, Calif.

Finest Italian queens, \$1.00 each; 6 for \$5.00. My methods free. J. W. Romberger, 3113 Locust St., St. Joseph, Mo.

25 colonies of bees on Hoffman frames in 8-frame hives; all straight combs. T. Edward Diener, 28 Jacques St., Elizabeth, N. J.

THREE-BAND ITALIANS ONLY. Untested queens, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50. H. G. Dunn, The Willows, San Jose, Calif.

Tested leather-colored queens, \$2.00; after June 1, \$1.50; untested, \$1.00; \$10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

GRAY CAUCASIANS.—Untested, \$1.25; select untested, \$1.50; tested, \$2.00; select tested, \$2.25. Three-band Italian queens at same prices. H. W. Fulmer, Box G, Point Pleasant, Pa.

FOR SALE.—Pure-bred Italian queens; also a few hundred pounds of bees. Queens ready April 15. Orders filled promptly or money returned. O. P. Hendrix, West Point, Miss.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1; 6 for \$5. Wm. S. Barnett, Barnetts, Va.

North Carolina Bred Italian queens of Dr. C. C. Miller's famous strain of pure three-band Italian bees; gentle and good honey-gatherers. May 1 until July 1, untested, \$1.00 each; 12, \$10.00; tested, \$1.50 each; 12, \$16.00; select tested, \$2.00 each. Safe arrival and satisfaction guaranteed. L. Parker, Benson, R. D. No. 2, N. C.

PHELPS queens will please you, \$1.00.
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Italian queens for sale. Untested, \$1.00 or \$10.00 per doz. No discounts on quantity orders. Satisfaction guaranteed.
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BUSINESS-FIRST QUEENS.—Three-banded and golden untested queens \$1.00 each; also Belgian hares. Send for price list.
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FOR SALE.—Golden Italian queens of an improved strain; the bee for honey, hardiness, gentleness, and beauty. Untested, \$1.00; tested, \$2.00.
Wallace R. Beaver, Lincoln, Ill.

Three-banded Italian queens at Shenandoah Apiary, ready May 15. Tested, \$1.25; untested, \$1.00; dozen, \$8.00.
S. Click, Box 16, Rt. 2, Mt. Jackson, Va.

Bright Italian queens, ready April 15th, \$1.00 each. Safe arrival guaranteed. Write for prices of larger quantities.
W. W. Talley, Greenville, Ala., Rt. 4.

GOLDENS THAT ARE TRUE TO NAME. Untested queens, each, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50.
Garden City Apiaries, San Jose, Calif.

Italian queens. Golden and 3-banded bred from best selected stock. Untested, each, 75c; 6, \$4.25; 12, \$8.25. Select untested, \$1.00 each. Satisfaction guaranteed. G. H. Merrill, Liberty, S. C.

FOR SALE.—Golden Italian queens which produce gentle yellow bees, the hardest workers we have known. Untested, \$1.00, tested \$1.50. Wildflower Apiaries, So. Trust Bldg., Little Rock, Ark.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey gatherers as can be found; each \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.
J. B. Brockwell, Barnetts, Va.

QUEENS.—We are breeding from the best Italian stock. Untested, \$1.00; select untested, \$1.50; tested, \$2.00. We have been breeding queens for more than 20 years. We guarantee safe arrival.
E. A. Simmons, Greenville, Ala.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, \$1.00; 6, \$5.00; tested, \$3.00; breeders, \$5.00 and \$10.00.
C. W. Phelps & Sons, Wilcox St., Binghamton, N. Y.

QUEENS OF SUPERIOR QUALITY.—Untested, 75c each, \$8.00 per doz.; select untested, 90c each, \$9.00 per dozen; select tested, \$1.50 each, \$15.00 per doz.; extra select breeder, \$5.00.
H. N. Major, South Wales, N. Y.

FOR SALE.—Golden Italian queens. Untested queens, \$1.00 each; six, \$4.25; per dozen, \$8.25; 50, \$32.50; \$60.00 per 100. Tested queens, \$1.50; 1 frame nucleus, no queen, 1.25; 2 frame, \$2.25; 3 frame, \$3.00; breeders, \$5.00 and \$10.00.
L. J. Dunn, 54 Broadway Ave., San Jose, Cal.

PURE ITALIAN QUEENS. Goldens that are GOLDEN and Doolittle's choice stock. Select untested (laying queens), one, \$1.00; 6, \$5.00; tested, \$1.50; best breeders, \$5.00. For large lots write for prices. Pure mating, safe arrival and satisfaction I guarantee.
J. E. Wing, 155 Schiele Ave., San Jose, Calif.

ITALIAN QUEENS.—The best I have ever had; untested each \$1; five, \$4.50; ten, \$8; twenty, \$15; fifty, \$35; 100 for \$60. Delivery beginning in June. Orders filled on time and safe arrival guaranteed.
J. B. Hollopeter, Queen Breeder, Rockton, Pa.

Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolians. Tested, \$1.00 each; untested 75 cts. each. Bees per lb., \$1.50; nuclei, per frame, \$1.50. Send your order for bees early.
C. B. Bankston & Co., Buffalo, Leon Co., Tex.

WANTED.—Young men of energy and character, of clean habits, not eligible for military duty, as helpers in our extensive bee-business. Fine chance to learn. Write immediately, giving wages, age, height, weight, experience, and references all in first letter, or expect no answer.
E. F. Atwater, Meridian, Idaho.

Golden Italian queens that produce gentle and good honey-gathering bees. No foul brood. Select tested, \$1.50; tested, \$1.25; untested, 85c.; 6, \$4.75; 12, \$9.00. After July 1, select tested, \$1.25; tested, 1.00; untested, 75 cts.; 6, \$4.25; 12, \$8.00. No nuclei or bees for sale.
D. T. Gaster, Rt. 2, Randleman, N. C.

WANTED.—Reliable, energetic and alert beekeeper, or student helper, in largest series of outapiaries in northwest. Work for extracted honey and all equipment and methods strictly modern. Give age, height, weight, experience, references and wages expected in first letter.
The Hofmann Apiaries, Janesville, Minn.

FOR SALE.—Achord's Pure Italian Queens, hardy and prolific. No disease. Satisfaction guaranteed. Before June 16, untested, 1 for 90c; 12 for \$10.00; tested, 1 for \$1.50; 12 for \$16.50. After June 16, untested, 1 for 75c; 6 for \$4.25; 12 for \$8.00; 50 or more, 65c each; tested, 1 for \$1.25; 6 for \$7.00. Best breeder, \$3.00.
W. D. Achord, Fitzpatrick, Ala.

Warranted queens from one of Dr. Miller's breeders, \$1.00 each, \$10.00 per doz. Tested queens, \$1.50 each. One-frame nuclei, \$1.50; two-frame, \$3.00; three-frame, \$4.50; without queens. Add price of queen if wanted. Our apiaries have been inspected and are free of disease. Ten-frame colonies, \$10.00; eight-frame, \$9.00; Danz. colonies, \$8.00 each, with tested queens. We are sold out of pound packages.
Geo. A. Hummer & Sons, Prairie Point, Miss.

HELP WANTED

WANTED.—A young lady for 1918 season who wants to learn beekeeping and help with housework. A fine chance to learn. Give age, weight, height, experience, and wages wanted in first letter. L. E. Farnsworth, Chief, R. D. No. 1, Box No. 9, Mich.

WANTED.—Middle-aged couple without children to assist in working 2-acre garden and orchard with bees, poultry, etc., on share basis. Beautiful spot in Southern Michigan. Prosperous village of near 3000. Address for particulars R. J. Davis, 418 Moccasin Ave., Buchanan, Mich.

WANTED.—Industrious young man, fast worker, as a student helper in our large bee business for 1918 season. Truck used for outyards and hauling. Apiaries located near summer resorts. Will give results of long experience and board and small wages. Give age, weight, experience, and wages in first letter.
W. A. Latshaw Co., Clarion, Mich.

SITUATIONS WANTED

WANTED.—An experienced beekeeper over military age wants work in an American apiary. Address Box 57, Blencoe, Iowa. 657

WANTED.—Young married man thoroly experienced, all-around beekeeper and queen-breeder wishes position for summer months.

E. A. Harris, Albany, Ala.

WANTED.—Work wanted in apiary east of Mississippi by man over draft age who understands bees well, but who seeks experience of beekeeping on large commercial scale. New York preferred.

R. Scott, Fairhope, Ala.



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A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc., needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. **THE BEST LIGHT CO.**
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Every beekeeper needs this volume in order to understand the honey flora. Descriptions are given of bee-flowers, bumblebee-flowers, hawk-moth flowers, butterfly-flowers, flowers pollinated by the wind and many others. It will also be of great interest to gardeners, fruit-growers, and lovers of nature generally. It is fascinating not only because of its very great informative value but because of the sense it imparts of the beauty of nature as revealed in the subject. Do you know why some bees visit only one kind of flower? Or how many flowers there are of each color in eastern North America? Or whether bees and butterflies prefer certain colors?

Illustrated by 119 photographs taken by the author chiefly of flowers natural size. \$2.00 net.

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Prompt Service

QUEENS... Select Three-banded . . . Italian or Leather-color

Queen's wings clipped free of charge.
Safe arrival guaranteed.

Untested	one, \$.75	twelve, \$ 8.00
Select untested	one, .90	twelve, 9.00
Select tested	one, 1.50	twelve, 15.00
Extra select breeder	one, 5.00	

H. N. Major, South Wales, New York

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Often need their reports and bulletins printed. We are in the market for this work. Our complete stock of cuts and illustrations are at your disposal. We can often save you the expense of new cuts. Let us quote you on your printing—reports, stationery, cartons, advertising matter, labels, etc.

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Publishers of Gleanings in Bee Culture

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WASHINGTON, D. C.

Talking Queens

Laws' Queens Speak for Themselves

Laws' queens have stood the test of continuous advertising in this journal for this the 20th season. Thousands of customers have testified to the merits of Laws' bees and queens, and if there is a displeased customer I do not know it.

I will mail Italian queens at the following prices: Untested, each, \$1.00; 12, \$10.00. Tested, each, \$1.25; 12, \$13.50. Breeders, none better, each, \$5.00.

W. H. LAWS
Beeville, Texas

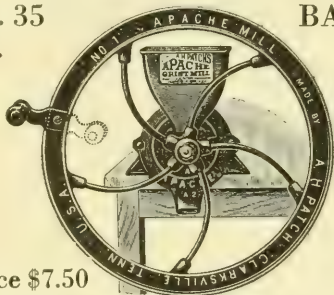
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Why not live better and save money, too?
Grind your wheat into Best Whole Wheat or Graham Flour. Your doctor knows how healthy these are. Make the BEST Corn Meal, the old-fashioned sort you can't buy at any price nowadays.

Do all sorts of fine and coarse grinding with an

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The Blackhawk Corn Sheller Inventor
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Is at your command at
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Western Honey Producers
Sioux City, Iowa

We have a market for your honey and
beeswax.

Our Food Page—Continued from page 352.

minutes, and then bake in a moderate oven about one hour.

STEAMED CORNMEAL AND BARLEY BREAD.

1½ cups cornmeal	2 cups sour or butter-
1 cup barley flour	milk
½ cup honey	1 teaspoon salt
	2 teaspoons soda

Sift dry ingredients three times, add milk and honey, beat or stir for three minutes, put into well oiled molds, cover and steam three hours. This will just about fill three one-pound baking powder cans when done. Raisins may be added if desired.

BARLEY FLOUR BISCUITS.

2 cups barley flour	1 teaspoon salt
5 teaspoons baking powder	milk
	2 tablespoons shortening

Measure the flour after once sifting, add the baking powder and sift again. Cut in the shortening with two knives and add sufficient milk or other liquid to make a soft

Continued on page 380

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We are now well supplied with a big stock of NEW ROOT HIVES, SUPERS, SECTIONS, and FOUNDATION, besides everything you may wish for the season. But don't delay ordering your wants, as goods are going out fast.

FINEST ITALIAN BEES and QUEENS.
We make a specialty of these and send the best stock money can buy.

POULTRY FEEDS. Dickinson's Globe Feeds are the best. Get our prices of one bag or twenty.

HONEY and BEESWAX always wanted, cash or in trade.

Send postal for Free Catalog.

S. J. GRIGGS & CO.,
Dept. No 25. Toledo, Ohio

"Griggs Saves You Freight"

Queens of Quality

Select three-band Italians; bred for business. Untested, \$1.00 each; six for \$5.00; \$9.00 per dozen. Circular free.

J. I. Banks, Dowlletown, Tennessee

Queens Rhode Island Queens

Italian Northern Bred Queens. Very gentle and hardy. Great workers. Untested, \$1; 6 for \$5. Circular on application. Queens delivered after June 1.

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56 Lawrence Street.

For Potato Bugs And Blight use

SULFOCID and CAL-ARSENATE

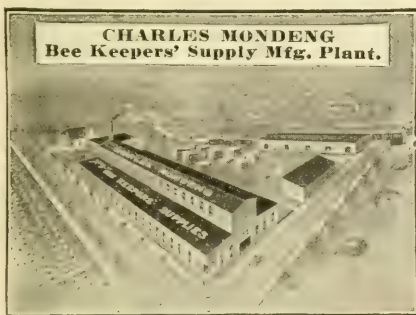
—a new combination which bids fair to replace the old Lime Sulphur-Arsenate of Lead and Bordeaux-Lead mixtures, in both orchard and garden.

It is more powerful and much less expensive. 1 gallon and 4½ lbs. makes 150 gallons of spray.

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Will Take Beeswax in Trade at
Highest Market Price.

Charles Mondeng

146 Newton Ave., N. Minneapolis, Minn.

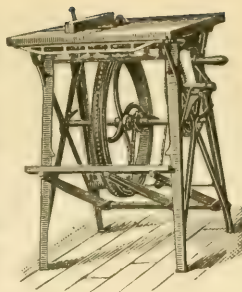
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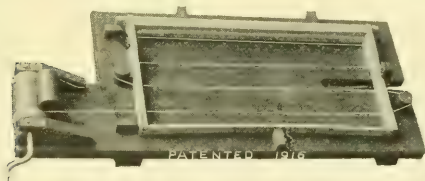
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Queens of MOORE'S STRAIN of Italians

PRODUCE WORKERS

That fill the super quick
With honey nice and thick

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Untested queens, \$1.00; six, \$5.50; 12, \$10.00.

Select untested, \$1.25; six, \$6.50; 12, \$12.00.

Safe arrival and satisfaction guaranteed.

Circular free.

Queen-breeder

J. P. MOORE,
Route 1, Morgan, Ky.

Our Food Page—Continued from page 378.

dough. Drop from spoon on oiled pan, shape into symmetrical biscuits, and bake in a quick oven. They may be rolled, but will be lighter if used as a drop biscuit.

POTATO CORN MUFFINS.

1 egg	4 teaspoons baking powder
1 cup milk	der
1 cup rice potato	2 tablespoons melted
1 cup fine cornmeal	shortening
	1 teaspoon salt

Beat the egg in the mixing bowl, add the milk, the rice potato, and the cornmeal in which have been sifted the baking powder and the salt. Add the melted fat and bake in a hot oven about 40 minutes. For those who desire a sweet muffin a tablespoon of honey may be added.

PITTSBURGH POTATOES.

4 cups boiled potatoes	1 pimento
diced	2 cups thin white sauce
1½ cups cheese cut small	1 teaspoon salt

Put the diced potatoes and the pimento cut small in an oiled baking dish. Thicken the white sauce with rice flour instead of wheat flour, stir in the cheese, and pour over the diced potatoes. Bake in a moderate oven until heated thru. The pimento may be omitted.

BELGIAN BAKED POTATOES.

Wash, pare, and slice potatoes as for French fried. Lay the strips in an oiled pan or baking sheet, brush with melted fat, and bake in a quick oven; salt and serve. These taste very much like French fried potatoes.

All measurements level.

WITTE

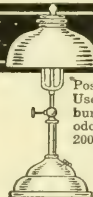
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The Tillson Company, Ltd.
Tillsonburg, Ontario, Canada

Special Notices by A. I. Root

THE ST. REGIS RASPBERRY UP TO DATE.

In the August 15th issue of GLEANINGS for 1915 I gave rather extravagant praise to the St. Regis raspberry, especially because of the fact that I obtained beautiful berries in only 80 days after putting out the little plants. I remarked at the time that the splendid results might have come about largely because they were planted where a poultry house and yard had been for many years. Well, a year later, in 1916, I did not get as much fruit, and that not of as good quality, as our other raspberries; but as no one else made mention I let the matter drop. Just now, however, since I see in several periodicals a disposition to dig up the plants and get rid of them on account of the poor quality and the regular swamp of raspberry canes that seem to be spread out unless a lot of work is done to keep them down, I have thought best to speak out, especially as I see the plants still advertised, with quotations of what I said about it years ago. Where the plant is allowed to grow up into a dense swamp the berries are poor compared with the Cuthbert and other raspberries, and but few of them. Perhaps if the plants were kept within bounds, we might get more and better fruit. But those who have tried it will, I think, find it quite a task. Notwithstanding what I have said, it is probably true, that you will get some nice fruit from the new plants in good soil in a shorter time than with any other berry I know of. But do not let them chase everything else out of your garden.

COLORADO BEEKEEPERS TO MEET.

A field meeting and basket picnic of the Colorado Honey Producers' Association will be held at Longmont, Col., on Saturday, June 15, at 10 a. m. Everybody interested in bee culture is cordially invited to be present.

Dr. Miller QUEENS

We are again rearing queens from mothers supplied by Dr. Miller from his apiary. These bees are proving to be very gentle as well as hardy and resistant to Foul Brood. Two queen-breeders not interested in us at all have declared them to be the gentlest bees they ever saw. Our list of customers that demand Miller Strain is growing fast. Remember that we are the only breeders that get breeders direct from Dr. Miller. Can you find a man more able than Dr. Miller to select your breeding queens? Besides that he has the material that he has been working on for over fifty years to select from. Safe arrival and satisfaction guaranteed.

One untested, \$1.20; 12 or more, \$1.00 each; Tested, \$2.00 each; select tested, \$3.50 each; breeders, \$5.00 to \$10.00 each.

The Stover Apiaries

Penn, Miss.

Formerly of Mayhew, Miss.

QUEENS

Bred for Honey Production

That are gentle and hardy. Reared from the best mothers by the best known methods. We will have 2000 mating nuclei in operation by June 15th.

We may have some pound packages to offer after June 15th but are not in position to say until about June 10th to 15th. Safe arrival and satisfaction guaranteed.

One untested, \$1.00 each; 12 for \$11.00; 25 to 1000, 80c each. Full colony in 8-fr. hive with tested queen, \$9.00; 10-fr. hive, \$10.00. Can make prompt shipment of these.

The Penn Company
Penn, Lowndes Co., Miss.

Special Price on Beekeepers' Supplies

as Follows:

15000	Sections, 4x5x1½, A.
15000	Sections, 4x5x1½, B.
300	Section holders for 4x5x1½.
3000	Sections, 3¼x5x1½, A.
100	A/8.
10	ARcD5, in 5's.
10	ARcD5, in 1's.
300	Jumbo frames.
5	J5/10, in 5's.
45	Rc/8, in 5's.
10	K/8.
15	K/10.
20	Empty 8 frame Jumbo bodies.
25	Empty Danz. bodies.
500	Danz. shallow frames.
150 lbs.	EXT. thin super, 4¼x16½.
50 lbs.	EXT. thin super, 4¼x17½.

Let us know what you can use
and we will quote special prices.

The A. I. Root Company
Mechanic Falls, Me.

BEE-SUPPLIES

FALCON LINE

We carry the largest supply
in our section. Send us
your inquiries.

Lowest Prices, Quality Considered

C. C. Clemons Bee Supply Co.
128 Grand Ave. KANSAS CITY, MO.

QUEENS

Quirin's Improved Superior Italian Bees
and Queens. They are Northern Bred
and Hardy. . 25 Years a Queen-breeder

PRICES	Before July 1st			After July 1st		
	1	6	12	1	6	12
Select untested....	1.50	8.00	15.00	1.00	5.50	10.00
Tested.....	2.00	10.00	18.00	1.50	8.00	14.00
Select tested.....	2.50	14.00	25.00	2.00	10.00	18.00
2-comb nuclei.....	4.00	22.00	42.00	3.50	18.00	35.00
3-comb nuclei.....	6.00	33.00	69.00	4.50	25.00	45.00
8-frame colonies.....	10.00	55.00		8.00	45.00	
10-frame colonies.....	12.00	68.00		10.00	55.00	
1-lb pkg. bees.....	3.00	16.00		2.50	14.00	
2-lb. pkg. bees.....	5.00	28.00		4.50	25.00	

BREEDERS.—The cream selected from our entire stock of outyards; nothing better. These breeders, \$5.00 each.

Can furnish bees on Danzenbaker and L. or Hoffman frames.

Above price on bees by pound, nuclei, and colonies does not include queen. You are to select such queen as you wish with the bees, and add the price.

No bees by pound sent out till first of June. Breeders, select tested, and tested queens can be sent out as early as weather will permit.

Send for testimonials. Orders booked now. Reference—any large supply dealer or any bank having Dunn's reference book.

H. G. Quirin, Bellevue, Ohio



Established 1885

It will pay you to get our 50-page catalog and order early.

BEEKEEPERS' SUPPLIES

THE Kind That Bees Need.

The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

Beeswax Wanted

In big and small shipments, to keep Buck's Weed-process foundation factory going. We have greatly increased the capacity of our plant for 1918. We are paying higher prices than ever for wax. . We work wax for cash or on shares.

Root's Bee-supplies

Big stock, wholesale and retail. . . Big catalog free.

Carl F. Buck

The Comb-foundation Specialist

Augusta, Kansas

Established 1899

THE LAST TIME YOU BOUGHT QUEENS

did you get what you were looking for? Were they thrifty, hardy, gentle, and beautiful? Were they the Imported Queens Americanized? Were they guaranteed to reach you in good condition, to be purely mated and to give perfect satisfaction? These are the qualities that have enabled

FOREHAND'S THREE-BAND---the thrifty kind

to stand over a quarter of a century of actual test; that has brought them up to a standard SURPASSED BY NONE, BUT SUPERIOR TO MANY.

	1	6	12
Untested.....	\$1.00	\$ 5.00	\$ 9.00
Select Untested.....	1.25	7.00	11.00
Tested.....	1.50	8.75	17.00
Select Tested.....	2.00	11.00	20.00

Our prices will continue the same until July 1. Write for circular.

W. J. FOREHAND & SONS, Fort Deposit, Alabama

Leininger's Strain ITALIANS

have a record of 30 years. Queens ready in June. Untested, each, \$1.25; 6, \$6; tested, each, \$1.75; 6, \$9.50. July and later: Untested, \$1; 6, \$5.50; tested, \$1.50; 6, \$9.00. Every queen guaranteed.

Fred Leininger & Son . . Delphos, Ohio

BEES Tested Italian Queens, \$1.50

We furnish full colonies of bees in single-walled and double-walled hives. Nucleus colonies and bees by the pound. Write for what you need.

I. J. Stringham . . Glen Cove, N. Y.

Mott's Northern-bred Italian Queens

are hardy, prolific, gentle, and hustlers, therefore resist well disease.

Untested, \$1.00 each; \$9.00 for 12.

Select Tested, \$1.50 each.

Virgins, 50c each; or three for \$1.00.

Bees by pound.

Plans "How to Introduce Queens," and "Increase," 25c. List free.

E. E. Mott, Glenwood, Mich.

QUEENS THAT WILL PLEASE

OVER TWENTY YEARS OF CAREFUL SELECTING AND BREEDING

GUARANTEE

You take no risk in buying my queens, for I guarantee every queen to reach you in first-class condition; to be purely mated, and to give perfect satisfaction.

They are bred from IMPORTED stock. The very best for honey gathering and gentleness. They are not given to swarming and are highly resistant to disease. Give me your order and if after you have given my queens a fair trial, you are not satisfied in every way that they are as good as you have ever used, just return them and I will send you queens to take their places or return your money with any postage you have paid out on returning the queens.

PRICES APRIL 1 TO JUNE 15th.

	1	6	12
Untested	\$1.00	\$ 5.00	\$ 9.00
Select Untested	1.15	6.00	10.00
Tested	1.50	8.00	17.00
Select Tested	2.00	11.00	20.00

L. L. FOREHAND . . . FORT DEPOSIT, ALABAMA

Queens Hardy, Long-lived and Disease-resisting . . . Queens

22 Years of Select Breeding Gives Us Queens of Highest Quality; Queens for Honey Production; Queens of Unusual Vitality.

"There are few queens their equal and none better."

WHAT BEES DO HEADED BY OUR QUEENS

"One swarm made 185 sections of honey and another 296 sections. I am well pleased."—MELVIN WYSONG, Kimmell, Ind.

"Your bees averaged 150 pounds of surplus honey each. I find them not only hustlers but gentle."—FRED H. MAY, Meredosia, Ill.

"I have tried queens from several different places and like yours best of all."—C. O. BOARD, Alabama, N. Y.

"We are only one mile from Lake Erie and exposed to high cold winds; in fact, this is the windiest place along the great lakes. Your bees were able to stand the winter with only an insignificant loss, and we would have no others. As for honey they averaged 175 pounds of extracted surplus, did not swarm, and gave an artificial increase of 39 per cent, which is as fine a record as can be had in this locality, especially when the work is done entirely by amateurs." Name furnished on request. North East, Pa.

PRICE LIST OF OUR GOLDEN AND 3 BANDED ITALIAN QUEENS

Untested, \$1.00.	25 or more, \$.90 each.	S. Untested, \$1.10.	25 or more, \$1.00 each.
Tested, \$1.50.	25 or more, \$1.40 each.	S. Tested, \$1.75.	25 or more, \$1.60 each.

We guarantee safe arrival of all queens—that they are very resistant to European foul brood, and, in fact, will give complete satisfaction. Wings clipped free of charge. Our capacity is 2000 queens monthly.

M. C. Berry & Company . . Hayneville, Alabama, U. S. A.

IS IT WORTH IT?

Can You Save the dollar? Mr. Beekeeper, is it worth your while to read the *American Bee Journal* at \$1.00 a year? Since the journal was taken over by the Dadants six years ago they have added many new things. One of these is a crop and market page. It is a full page devoted to crop and market conditions from April to January — just what the beekeeper needs.

Here is what one beekeeper thinks about it:

Had I been taking your Journal last year I no doubt would have received more for my honey. I sold for ten cents and was led to believe that this was a good price at the time, but in a few days I saw in your Journal that the crop was short and prices were likely to be much higher and this proved to be true.

GEO. M. MILLER.

Woodland, California

AND THE AMERICAN BEE JOURNAL
COSTS ONLY ONE DOLLAR A YEAR.

“PRACTICAL QUEEN REARING”

By Frank C. Pellett

Is a new cloth-bound book of over 100 pages, finely illustrated, giving in concise form all of the modern methods of rearing queens. Mr. Pellett has had much experience and his many trips to visit practically all the larger queen breeders have given him an insight into standard methods with practical application. All the different methods are described.

Put in a form so that it can be used by the ordinary beekeeper and veteran queen-breeder alike.

Price, postpaid, \$1.00, or with the *American Bee Journal* one year only \$1.75. Canadian postage 15c extra. *Send in your order today.*

AMERICAN BEE JOURNAL

HAMILTON, ILLINOIS



Spies and Lies

German agents are everywhere, eager to gather scraps of news about our men, our ships, our munitions. It is still possible to get such information through to Germany, where thousands of these fragments—often individually harmless—are patiently pieced together into a whole which spells death to American soldiers and danger to American homes.

But while the enemy is most industrious in trying to collect information, and his systems elaborate, he is *not* superhuman—indeed, he is often very stupid, and would fail to get what he wants were it not deliberately handed to him by the carelessness of loyal Americans.

Do not discuss in public, or with strangers, any news of troop and transport movements, of bits of gossip as to our military preparations, which come into your possession.

Do not permit your friends in service to tell you—or write you—"inside" facts about where they are, what they are doing and seeing.

Do not become a tool of the Hun by passing on the malicious, disheartening rumors which he so eagerly sows. Remember he asks no better service than to have you spread his lies of disasters to our soldiers and sailors, gross scandals in the Red Cross, cruelties, neglect and wholesale executions in our camps, drunkenness and

vice in the Expeditionary Force, and other tales certain to disturb American patriots and to bring anxiety and grief to American parents.

And do not wait until you catch some one putting a bomb under a factory. Report the man who spreads pessimistic stories, divulges—or seeks—confidential military information, cries for peace, or belittles our efforts to win the war.

Send the names of such persons, even if they are in uniform, to the Department of Justice, Washington. Give all the details you can, with names of witnesses if possible—show the Hun that we can beat him at his own game of collecting scattered information and putting it to work. The fact that you made the report will not become public.

You are in contact with the enemy today, just as truly as if you faced him across No Man's Land. In your hands are two powerful weapons with which to meet him—discretion and vigilance. Use them.

COMMITTEE ON PUBLIC INFORMATION

8 JACKSON PLACE, WASHINGTON, D. C.

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The Secretary of State
The Secretary of War
The Secretary of the Navy
United States Gov't Comm.
on Public Information

Contributed through
Division of Aerial Defense



This space contributed for the Winning of the War by
THE A. I. ROOT COMPANY, MEDINA, OHIO.

WHY???

Why is it that so many beekeepers prefer Dadant's Foundation? Why does it give such good satisfaction, and why is it that when tested side by side with many other makes beekeepers have reported that "they take to DADANT'S first."

Do We Use Special Sheeting Machinery? --- NO.

We use the Weed process of sheeting our beeswax into endless rolls, and it is the same process as used by nearly all manufacturers.

Do We Use Special Foundation Mills? --- NO.

We use the same kind of mills as are used by practically every foundation manufacturer in the world.

Do We Use Special Beeswax? --- NO.

We use beeswax such as is produced by beekeepers all over United States.

Then WHY??

Because Our beeswax is cleaned in such a way that all impurities are removed, and all the fine qualities are retained.

Because Sulphuric and other acids recommended and used by many manufacturers for cleaning beeswax are not used by us.

Because Our motto is and always has been "EVERY SHEET PERFECT," and we live up to it.

Because For FORTY YEARS comb foundation has been and still is OUR SPECIALTY. When you get DADANT'S FOUNDATION you know that you are getting the best that money can buy. When you send your beeswax to us to be worked into foundation you know that you will get perfect work done. When you ship us old combs and cappings to render you will get the maximum of wax they contain; and, if desired, this wax will be worked into the finest quality of foundation made.

It is Up to You

Therefore, to insist on DADANT'S FOUNDATION when you order your goods from your dealer. If you can not get it from him then order of us. . .

Dadant & Sons, Hamilton, Ills.

JUL 10 1915

Gleanings in Bee Culture



Maple Grove

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you spot cash for anything you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.

633 Central Bldg., Sixth and Main Sts.
Los Angeles, California
Telephones: Home 10419; Main 5606

BEEKEEPERS KEEP IN TOUCH WITH

Leutzing & Lane, San Francisco, Cal.

236-238 Drumm Street

Buyers of EXTRACTED and COMB HONEY
Shippers and Exporters of HONEY

The WORLD is our market

Beeswax Wanted

In big and small shipments,
to keep Buck's Weed-pro-
cess foundation factory go-
ing. We have greatly in-
creased the capacity of our
plant for 1918. We are
paying higher prices than
ever for wax. . . We work
wax for cash or on shares.

Root's Bee-supplies

Big stock, wholesale and re-
tail. . . Big catalog free.

Carl F. Buck

The Comb-foundation Specialist
Augusta, Kansas

Established 1899

"Griggs Saves You Freight"

TOLEDO

How about Honey - cans, Honey - cases,
etc.? We have a large and complete
line of Root's Shipping-cases. No em-
bargos at Toledo. All freight going out
promptly.

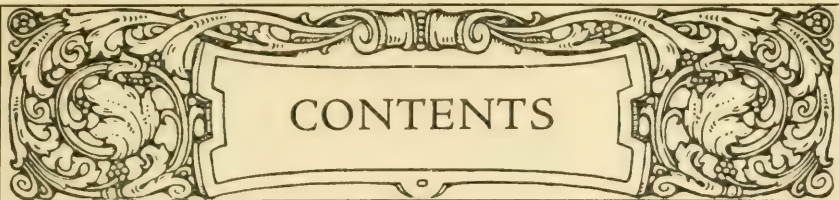
Honey - Honey - Honey

We want 10 carloads of Extracted White
and 10 cars Comb. How many can you
furnish?

Queens

Golden and Leather Colored. Prompt
delivery. Write us. Honey-extractors--
big line. Send for free catalog.

S. J. GRIGGS & CO.,
Dept. No. 25 Toledo, Ohio
"Griggs Saves You Freight"



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SUBSCRIPTION RATES.—One year, \$1.00; two years, \$1.75; three years, \$2.50; five years, \$4.00. Canadian subscription, cents additional per year, and foreign subscription, cents additional. **DISCONTINUANCES.**—On and after March 1, 1917, all subscriptions, not paid in advance, or specifically ordered by the subscriber to be continued, will be stopped on expiration. No subscriber will be run into debt by us for this journal. **CHANGE OF ADDRESS.**—Give your old address as well as the new and write the name that appears on the paper. **REMITTANCE.**—Should be sent by postoffice money order, bank draft, express money order or check. **CONTRIBUTIONS** to GLEANINGS columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. **ADVERTISING RATES.**—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. **ADVERTISERS' RELIABILITY.**—The publishers use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly.

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

E. R. ROOT
Editor

Editorial Staff
A. I. ROOT
Editor Home Dept.

H. G. ROWE
Managing Editor

**We offer you even better service
than ever before at our new loca-
tion.**

Come in and see us.

Have you received our new catalog?

Write for our 1918 Bee Catalog now.

BIG MONEY?

YES. READ HOW

If your banker said to you, "Mr. Brown, buy that piece of land next to you at \$100.00 per acre, it will be worth \$2,000.00 per acre this coming summer." Would you buy it to-day or wait—well, until later on? We are sure you would not delay one moment.

We offer you the same kind of buy—that is, make \$20.00 on each \$1.00 invested. Buy your sections and bee-supplies NOW for the sections cost less than \$1.00 per hundred, and next summer when they are filled with honey, they will be worth \$20.00—think of it, those same sections that you bought for \$1.00. The same holds good on other supplies. ORDER NOW and tell your neighbors to do the same, or Mr. Railroad Embargo "will buy that piece of land next to you and you'll be left."

Old Comb

Ship your old comb and cappings to us for rendering. We charge you 5 cts. per pound for the wax rendered, and pay you the highest market price.

Wax and Honey

We always buy Comb and Extracted Honey as well as Beeswax, so when you have the above to offer, write us and you will be well pleased.

FOUR REASONS FOR OUR SUCCESS

**HONESTY
QUALITY**

Lewis' Beeware

If you have used LEWIS' BEEWARE, you know the quality, if not this is just the time to invest your money where the results are lasting.

"Made Like Furniture"

**PRICE
SERVICE**

**DADANT'S
FAMOUS
FOUNDATION**

**R O O T'S
SMOKERS and
EXTRACTORS**

The Fred W. Muth Co.

Pearl & Walnut Sts.
Cincinnati, Ohio

"Quality Counts With Us."

BEE-SUPPLIES

Read Order Early

Owing to the congestion of freight and embargoes we caution all beekeepers to get their order in early, otherwise you will suffer a great loss when you actually need goods, and you perhaps will be unable to get them for the above reasons. We have a large stock on hand, and can fill orders promptly, provided the railroads will accept freight.

Send for Our New Catalog

C. H. W. Weber & Co., Cincinnati, O.

2146 Central Avenue

- Get that last drop of honey.
- It's the maximum crop that is needed this year.
- You can't afford to let your bees be crowded for lack of equipment.
- We can ship goods to you promptly, and they are Root's Goods.
- HONEY CONTAINERS. We are the Michigan agents for the Weis fibre honey containers. They are inexpensive, clean, and leak-proof. Send ten cents in stamps for samples and prices.
- HONEY WANTED.

M. H. HUNT & SON, Lansing, Michigan

HONEY MARKETS

U. S. Government Market Reports.

HONEY ARRIVALS SINCE JUNE 1 AT IMPORTANT COMMERCIAL PORTS.

Medina, O.—2,092 lbs. Florida; 2,565 lbs. Colorado; 1,080 lbs. Ohio; 85,700 lbs. California.

SHIPPING POINT INFORMATION, JUNE 14.

San Francisco, Cal.—Mild, clear. Demand and movement moderate, market fair. Cash to producers, white orange, few sales, 20-21c, light amber 15-18c. Beeswax, 33-36c; sales to jobbers 1½c higher; for export 2c higher. Unofficial report of crop prospects: light amber and alfalfa prospects good; lack of rain in a large section of the State will probably reduce the sage crop.

Los Angeles, Cal.—Shipments light. Demand and movement very slow, market weaker, submarine scare limiting the export demand; local buyers holding off on advice from East; many growers holding for higher prices; few sales; cash to producer on farm; best, white orange, extracted, 20c lb.; light amber, extracted, 16-18c lb. Beeswax 34-35c lb.

TELEGRAPHIC REPORTS.

(The prices quoted in this report represent the prices at which the "wholesale carlot receivers" sell to the "jobbers.") Arrivals include receipts during preceding two weeks. Prices represent current quotations.)

Denver.—No fresh arrivals. No comb honey on market; extracted honey, supplies practically exhausted; demand good; white to amber, 17-20c per pound; cash to producer on farm 13½-16c per pound. Beeswax, receipts and supplies very light; market slightly weaker; price to producers, 35-37½c per pound.

New York.—Arrivals, 113 barrels Florida, 19 barrels Hayti. Receipts light; demand slow; market weak. Comb honey, no sales reported. Extracted honey, Porto Rican, \$2.40-2.50 per gallon, mostly \$2.50; Cuban, on hand previous to embargo, \$2.40-2.65 per gallon, some \$2.00; Florida, \$2.00, 2.50 per gallon, some higher. Beeswax, arrivals, 22 sacks, 5 bales from Hayti. Receipts light. Good demand and movement, market steady. Yellow 40-42c per pound, mostly 41-42c; dark 38-41c, mostly 40-41c.

Minneapolis.—Receipts and supplies very light. Demand and movement slow, market weaker. Minnesota, Wisconsin, and Iowa; comb honey, white, fancy, 24-section cases, mostly \$5.50; special brands, cartons, \$7.00-7.20. Extracted, Minnesota and Wisconsin, white, fancy, 60-lb. pails 21c per lb. Beeswax, no sales reported.

St. Paul.—Receipts light; supplies very light. Demand slow, market fair. Minnesota and Wisconsin, comb honey, white, fancy, 24-section cases, few sales; all sales in small lots, mostly \$6.00; special brands, cartons, \$6.75. Extracted, supplies exhausted. Beeswax, no sales reported.

Philadelphia.—Receipts light; supplies very light. Demand slow, movement moderate. Sales to confectioners, principally in bulk. Southern, domestic, extracted, 20-23c per pound; \$2.25-2.50 per gallon.

Chicago.—Practically no supplies. No sales reported.

St. Louis.—No fresh arrivals. Sales insufficient to quote. Beeswax, no supplies.

Cincinnati.—9,714 lbs., Florida; 693 lbs., Kentucky; 60 lbs. Tennessee arrived. Arriving supplies are very light, no sales reported. Beeswax, demand good, market strong, average yellow, 45-48c per lb.

Kansas City.—No fresh arrivals. Supplies practically exhausted. Few sales, all sales in small lots. Native Missouri, quality and condition generally good, 24-comb, flat cases, No. 1, light, \$7.50. Beeswax, receipts light, buyers paying 38-40c per lb.

CHARLES J. BRAND,

Chief of Bureau of Markets.

Washington, D. C., June 17, 1918.

General Quotations of Wholesalers.

[These firms are asked to quote the wholesale prices they make to retailers. Accordingly, their prices must be figured at least one profit higher than the price paid the producer. The large deal-

ers do not quote prices in print that they will pay futrely to producers.]

CHICAGO.—No comb honey. Extracted honey, white, per lb. 22c; light amber, in cans, 20c. Clean, average yellow beeswax, per lb., 40c.

R. A. Burnett & Co.

Chicago, Ill., June 17.

ST. LOUIS.—Our market is entirely cleaned up of old crop of both extracted and comb honey. Little new crop honey has arrived in this market but quite a quantity in transit now headed this way. There is some little demand for comb honey and receipts will meet with ready sale. Comb honey, extra fancy, (per case) \$5.50; fancy, \$5.00; No. 1, \$4.50; No. 2, \$4.00. Extracted honey, white (per lb.) 19c; light amber, in cans, 16c; amber, 14-15c. Clean, average yellow beeswax, per lb. 39c.

R. Hartman Produce Co.,

KANSAS CITY.—There is no new honey on this market, and it is very hard to give reliable quotations on same. Feel confident any new honey would sell around \$5.00 per case or more. Extracted honey, white (per lb) 17 to 21c, according to quality and kind. Clean, average yellow beeswax, per lb., 30-35c according to quality and kind.

C. C. Clemons Produce Co.

Kansas City, Mo., June 17.

BUFFALO.—There is no honey offering in this market at the present time. Cannot quote you on comb honey. There is very little extracted to be offered, which we have sold in 50-pound cans at 22c per lb. for light amber. There is quite a demand, and believe either comb or extracted would sell at extreme prices if offered on this market.

Gleason & Lansing.

CLEVELAND.—Our market is practically bare of comb honey. A little has arrived from Florida and Alabama but nearly all of it in bad order and there is no market price established. A limited quantity of comb honey in good order would probably sell. Comb honey, extra fancy (per case) \$6.00-6.50; fancy, \$5.50-6.00; No. 1, \$5.00-5.50; No. 2, \$4.00-4.50.

C. Chandler's Sons.

Cleveland, O., June 17.

PORTLAND.—Prospects for honey crop very good at present writing. Old stocks of extracted honey cleaned up. No new honey offered as yet, rather early. No comb honey on this market, either old or new. Extracted honey, white (per lb.), 21-22c; light amber, in cans, 19-20c; amber, 18-19c. No beeswax offered.

Pacific Honey Co.

Portland, Ore., June 11.

TORONTO.—New honey has not yet arrived. Stocks of old honey are completely exhausted. No market quotations available as yet.

Eby-Blain Limited.

Toronto, Ont., June 17.

MONTREAL.—Very little honey on this market. Comb honey, extra fancy, per lb., 26c; fancy, 25c; No. 1, 23c; No. 2, 20c. Extracted honey, white, per lb., 22c; light amber, in cans, 21c; amber, in cans, 19c.

Gunn, Langlois & Co., Ltd.

HAMILTON.—No honey offered yet. Have none in stock so will be ready for the new crop when offered.

F. W. Fearman & Co., Ltd.

Hamilton, Ont., June 15.

MEDINA.—Since our last report, the offers of southern and western stocks have increased materially, and shipments of considerable importance consigned to us are on the way. Our prices to producers have run about as follows: Palmetto, 18-20c; mesquite, 18-19c; California orange, 20-21c; all of these have been for immediate acceptance and shipment, as we are making but very few contracts for later shipment. While we have been able to make the above prices for immediate shipments thus far, we feel apprehensive of a slump in the market due to the restrictions on export trade, possible food regulation price in England, the excessive freight rates, etc. Crop prospects in most places are favorable and dealers and consumers generally are not taking readily to the prevailing high prices.

The A. I. Root Company.

Special Notices by A. I. Root

If I regard iniquity in my heart, the Lord will not hear me.—PSALM 66:18.

On June 3 the Y. M. C. A. at its annual meeting of the association's war council gave a list of the articles sent to the soldiers, as I understand it, during the past year. I clip from the *Cleveland Plain Dealer* one single paragraph as follows:

"Reports submitted during the meeting showed that 15,135,500 cigarettes, 1,200,000 Testaments, 1,000,000 feet of motion picture films, 60,000,000 sheets of stationery, 2,040,000 packages of chewing gum, 9,913,000 cigars, 30,000,000 cans of preserved fruit, and 21,000 phonograph records, together with tons of baseballs, footballs, and other athletic paraphernalia have been sent abroad."

Well, for several days past there has been running thru my mind the statement above made; apparently in the same breath, we are told of over fifteen million cigarettes and over a million testaments! It would look as if the newspaper reporter or the speaker at that great war council saw nothing incongruous or remarkable in linking cigarettes and testaments together. One might also infer also, that they consider cigarettes as the more important of the two, because they are mentioned first and because there are about fifteen times as many of them. Is it possible that Dr. John R. Mott uttered no protest when this statement was made in his hearing? Some little time ago I asked Mr. Lanham, who is prominent in Y. M. C. A. work in Ohio, if it was true that the Y. M. C. A. was furnishing cigarettes to soldiers. Some time later he replied that he had looked into the matter and that the Y. M. C. A. did not by any means indorse the including of cigarettes among other things sent to the soldiers, but that a few misinformed people had included them in the packages.

Elsewhere in this issue I suggested that the Lord could not hear our prayers for peace while we as a nation are cherishing or are in partnership with the beer traffic. And once more I want to urge, that God can not hear our prayers while we put cigarettes and his sacred word in the same category. Our nation and other nations just now are taking very great pains to eliminate everything prejudicial to the very best and highest physical welfare of the

soldiers. How, then, is it possible that after our churches, our teachers, college professors, physicians, together with such men as Thomas A. Edison, Henry Ford, and the good people of the whole wide world, offer their testimonies as to the harmfulness of the cigarette habit, that there should be such awful and criminal stupidity as to put cigarettes side by side with testaments? or have we already given the cigarette "the right of way?" May God help us to learn the great lessons he is trying to teach us by permitting this terrible war to go on month after month and year after year.

Later: In the *Modern Merchant and Grocer* World I find a column or more of protest, winding up with the following: "I'll tell you what let's do after the war. Let's put everybody in jail that eats candy, and teach 'em to smoke cigarettes in the public schools. Girls, too, no reason why they should be shut out of a bully good thing like cigarettes."

"THE STROLLER."

Still later.—Today is June 19, and I have just learned that thousands of boys and young men are learning to use cigarettes because of the war; and not only that, but the use of cigarettes among school girls is growing and spreading in some localities.

Beekkeepers' Associations. . . .

Often need their reports and bulletins printed. We are in the market for this work. Our complete stock of cuts and illustrations are at your disposal. We can often save you the expense of new cuts. Let us quote you on your printing—reports, stationery, cartons, advertising matter, labels, etc.

The A. I. Root Company, Medina, Ohio
Publishers of *Gleanings in Bee Culture*

"Special Crops" A high-class illustrated monthly journal devoted to the Growing and Marketing of Ginseng, Golden Seal, Senega Root, Belladonna, and other unusual crops. \$1.00 per year. Sample copy 10c. Address
Special Crops, Box G, Skaneateles, New York

Queens Hardy, Long-lived and Disease-resisting Queens

22 Years of Select Breeding Gives Us Queens of Highest Quality; Queens for Honey Production; Queens of Unusual Vitality.

"There are few queens their equal and none better."

WHAT BEES DO HEADED BY OUR QUEENS

"One swarm made 185 sections of honey and another 296 sections. I am well pleased."—MELVIN WYSONG, Kimmell, Ind.

"Your bees averaged 150 pounds of surplus honey each. I find them not only hustlers but gentle."—FRED H. MAY, Meredosia, Ill.

"I have tried queens from several different places and like yours best of all."—C. O. BOARD, Alabama, N. Y.

"We are only one mile from Lake Erie and exposed to high winds; in fact, this is the windiest place along the great lakes. Your bees were able to stand the winter with only an insignificant loss, and we would have no others. As for honeythey averaged 175 pounds of extracted surplus, didn't swarm, and gave an artificial increase of 39 per cent, which is as fine a record as can be had in this locality, especially when the work is done entirely by amateurs." Name furnished on request. North East, Pa.

PRICE LIST OF OUR GOLDEN AND 3-BANDED ITALIAN QUEENS

Untested, .75	25 or more, \$.60 each.	S. Untested, .90	25 or more, \$.75 each.
Tested, \$1.50	25 or more, \$1.25 each.	S. Tested, \$1.75	25 or more, \$1.60 each.

We guarantee safe arrival of all queens—that they are very resistant to European foul brood, and, in fact, will give complete satisfaction. Wings clipped free of charge. Our capacity is 2000 queens monthly.

M. C. Berry & Company . . Hayneville, Alabama, U. S. A.

Superior Foundation

"Best by Test." Superior quality creates tremendous demand—over two carloads shipped during May. Have you ordered?

American Can Co. Honey Cans

Over four carloads now on hand. Other cars ordered.

Dovetailed Beehives

Our stock is complete. Prompt shipments guaranteed.

Honey Extractors

Plenty on hand—more enroute.

Sections and Shipping Cases

"Everything in Bee Supplies."

We recommend early ordering to offset slow transportation.

Yours for Prompt Service

Superior Honey Company, Ogden, Utah

Root's ^{Strain of} Italian Queens

Owing to the enormous demand for our queens we have been compelled to advance our prices over last season. In numerous cases this strain has proven itself to be

ALMOST ENTIRELY IMMUNE TO
EUROPEAN FOUL BROOD

The queens are reared by one of the best queen breeders in the whole United States, namely, Mr. M. T. Pritchard and Son. They are famous for their resistance to European foul brood and

FAMOUS FOR HONEY-GATHERING QUALITIES

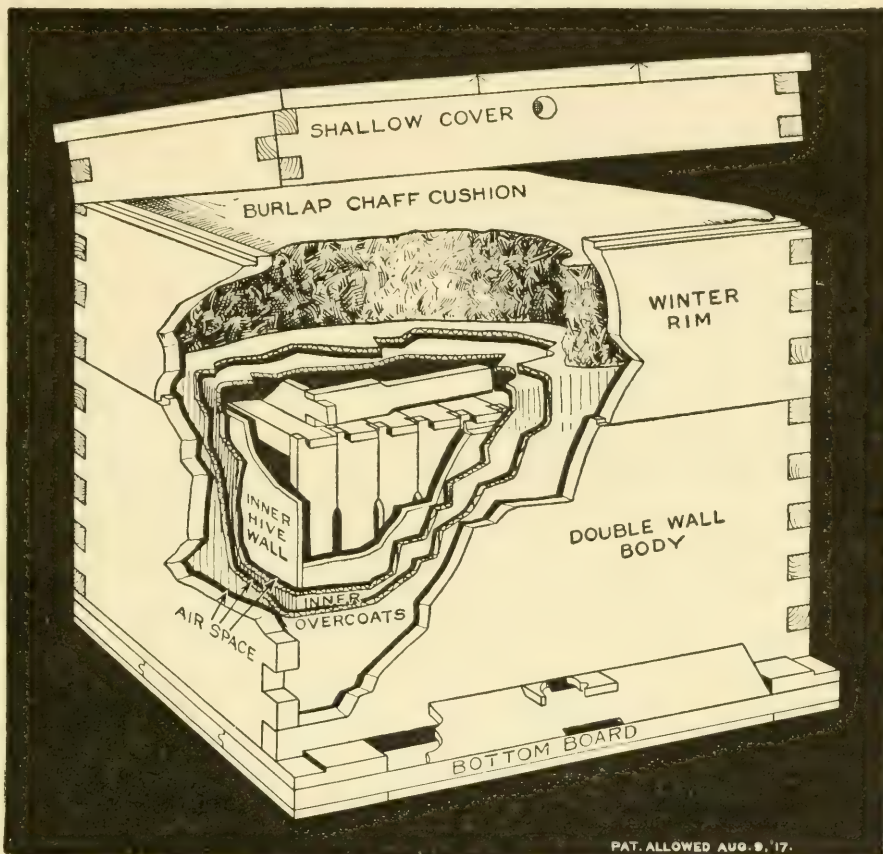
WRITE FOR SPECIAL TERMS IN QUANTITIES

The A. I. Root Co., Medina, Ohio

Winter Problem Solved

By Woodman's Improved Protection Hive

"The Hive With an Inner Overcoat" ¹⁰⁰ PER CENT PERFECT PROTECTION BY TESTS, WINTERS OF 1916-17-18.



THE INNER OVERCOAT DID IT. Without any special preparation we have wintered bees in these hives without loss. It is a joy to see the condition they are in, when compared with other styles of hives and wintering methods. The INNER OVERCOAT is telescoped down over the brood nest, in between the outer and inner hive walls, when preparing them for winter. In the spring it is removed and stored away in the K. D. flat. Not more than two minutes are required to pack or unpack a hive by this method. The INNER OVERCOAT affords more protection than several inches of ordinary packing material. Send for a special circular showing 10 large illustrations.

TIN HONEY PACKAGES. Sixty-Pound Cans, in cases or in bulk are being sold by us at prices considerably below general market prices. Send us an estimate of your requirements and let us quote prices.

Friction-Top Pails, any size furnished and in quantities as you may desire. Send us a list of your requirements and let us quote prices as we can save you money. The tin can factories are rushed with orders, the tin plate situation is serious and transportation slow, so it will be wise to place your orders early.

A. G. Woodman Co., Grand Rapids, Michigan

WHY???

Why is it that so many beekeepers prefer Dadant's Foundation? Why does it give such good satisfaction, and why is it that when tested side by side with many other makes beekeepers have reported that "they take to DADANT'S first."

Do We Use Special Sheeting Machinery? --- NO.

We use the Weed process of sheeting our beeswax into endless rolls, and it is the same process as used by nearly all manufacturers.

Do We Use Special Foundation Mills? --- NO.

We use the same kind of mills as are used by practically every foundation manufacturer in the world.

Do We Use Special Beeswax? --- NO.

We use beeswax such as is produced by beekeepers all over United States

Then WHY??

Because Our beeswax is cleaned in such a way that all impurities are removed, and all the fine qualities are retained.

Because Sulphuric and other acids recommended and used by many manufacturers for cleaning beeswax are not used by us.

Because Our motto is and always has been "EVERY SHEET PERFECT," and we live up to it.

Because For FORTY YEARS comb foundation has been and still is OUR SPECIALTY. When you get DADANT'S FOUNDATION you know that you are getting the best that money can buy. When you send your beeswax to us to be worked into foundation you know that you will get perfect work done. When you ship us old combs and cappings to render you will get the maximum of wax they contain; and, if desired, this wax will be worked into the finest quality of foundation made.

It is Up to You

Therefore, to insist on DADANT'S FOUNDATION when you order your goods from your dealer. If you can not get it from him then order of us. . .

Dadant & Sons, Hamilton, Ills.

GLEANINGS IN BEE CULTURE

JULY, 1918

EDITORIAL

IN VIEW of the heavy winter losses, and the difficulty of sending bees by express,



Big News— Bees by Mail.

Dr. E. F. Phillips
of the Bureau of
Entomology and
the Editor of this

journal recently appeared before the Post-office Department, three different times, asking that the privilege of sending bees in pound lots by parcel post be granted. At the last interview we submitted letters from shippers of bees, explaining their troubles in sending by express and the need of the parcel post privilege. We were received favorably at each interview, and on June 18 a new ruling permitting bees to be sent by mail in suitable cages was issued from the office of the Postmaster General.

For style and form of cage see particulars in our department of "Just News." We will have illustrations in our next issue, showing a non-patented cage that meets the conditions of the Department. It uses no wire cloth, ventilation being secured thru saw cuts thru the sides of the box one-eighth of an inch wide and three-eighths of an inch apart. If the reader can't wait till next issue, we will send particulars by mail.

We wish to emphasize here that the mailing conditions must be met absolutely or we may lose this invaluable privilege. One bad mailing package sent by a careless shipper, allowing bees to get loose in the mail, might cause this ruling, so important to beekeepers, to be revoked.



MORE AND MORE come reports showing that the winter losses east of the Mississippi during 1917 and



Winter Losses Make Need of Increase.

1918 are probably
much more severe
than those of the
winter of 1881 and

1882. That winter, up to this time, was the most severe on bees ever known; but last winter has proved even worse, if the reports that we are constantly getting are true.

The unfortunate thing about it is that some good beekeepers, who have wintered year after year with an average mortality of from three to five per cent, lost last year anywhere from 50 to 75 per cent.

Practically all bee-breeders thruout the United States have been flooded with orders for bees in nucleus or package form. Reports from breeders in the South show that

the demand for bees has been far greater than the supply. Some of them evidently cashed the checks sent for bees thinking they would have no difficulty in buying more. This they have been unable to do, for the losses in some of the Southern States have been severe. While colonies in the South did not die outright, the weather conditions were so unfavorable that brood-rearing could not progress.

In view of the conditions reported, all patriotic beekeepers should make preparations for increase next year. This may require sugar. The mistake should not be made of splitting up a colony into five, for only an expert can build up the whole five so they will be strong enough for winter, and many experts even would fail to do this. The most one should try to do is to make two colonies out of one; and be sure they are good ones and abundantly supplied with stores in October at the latest.

One reason for the severe winter losses was the inability to buy sugar last fall. The result was that many colonies went into winter quarters with barely enough stores to carry them thru till spring.

The lesson that comes to the beekeeper this year is not to extract too closely. Leave the brood-nest full, and then lay aside a lot of reserve combs of stores. The present price of extracted honey will cause many to yield to the temptation to extract closely and substitute a nine-cent syrup, which, with the water added, will make the syrup cost about seven cents to replace honey at 20 to 25 cents. It looks like a good trade; but—look out.



A YEAR AGO this time the honey-container situation was a serious one for the honey producer. During



The Honey- Container Situation.

the summer of 1917 no one could be certain of securing either glass or tin

containers. A year ago this month Gleanings summed up the container situation for both glass and tin in these words: "The glass manufacturers are not putting out any glass containers except for use in preserving perishable food stuffs. What glass containers for honey can be secured by even the largest honey bottlers are secured 'hit or miss,' 'catch as catch can.' The manufacturers generally are turning down the

honey bottlers' inquiries for contracts and deliveries or quoting enormously advanced prices without promise as to date of delivery. . . . The exact situation in tin cans is—acute shortage and uncertainty."

The situation today is entirely changed. The glass manufacturers are not only in position and willing to fill all orders coming to them for glass containers, but they are quite actively soliciting such orders. This change in the glass situation undoubtedly arises from a very much reduced demand for bottles for the liquor trade (whisky being practically knocked out) as well as the greatly diminished demand for bottles for soft drinks, the manufacture of which has been greatly restricted by the Food Administration.

The cost of honey as well as the cost of glass has so greatly advanced as to make it impracticable to bottle honey at a price at which the public will buy. When a little honey could be bought in a glass container for ten cents it attracted the purchaser. But when a little honey can not be bought for less than twenty cents it does not attract the purchaser. Accordingly, glass containers for honey are not in demand by the honey packers.

The supply of tin can containers has also improved, largely because of restriction to strictly necessary uses for tin containers of all kinds.

Under these demand and production conditions, it would seem that the manufacturers of both glass and tin containers might offer their products at a lower figure, to stimulate demand. But this is not the case. If, in these war times, any manufacturer anywhere is reducing the price of his product to the jobber or wholesaler (and so to the final user), we have not heard of it. Manufacturers of glass and tin are holding for the same high prices that prevailed when users of glass and tin containers were begging them as a favor to fill their orders.



WHEN THE EDITOR was in Washington recently, Dr. E. F. Phillips said he would

Don't Extract too Closely.

recommend to the Sugar Division of the Government not to let beekeepers who have extracted too closely have any sugar. Dr. Phillips' recommendation has great weight, and beekeepers everywhere should lay in a lot of sealed stores in combs, and be ready for a sugar shortage.

There is grave danger, too, even if the Sugar Divisions of the various States were willing to disburse the sugar, that there will be none available this fall. Recent submarine activities along the Atlantic coast may prevent the carrying of sugar from the West Indies to the United States; and, even with the submarine under control, we are advised that there will be a sugar shortage this fall and winter. It becomes doubly and trebly important, therefore, that bee-

keepers should not extract too closely, and that they go further and lay aside a set of extracting-combs of sealed stores to give to the bees next spring. While it is admitted by our best beekeepers that bees, even during a severe winter, will do better on sugar stores, we had better not bank on getting a supply of sugar this year.



IT IS AN open secret of well-informed beekeepers that there was considerable speculation



Speculation In Honey and Other Foods.

in honey last season. It is known that large shipments of honey were made from the West to the East, after the 1917 crop was supposed to be exhausted, and it is said that this was honey that had been held in warehouses for double the purchase price and more. This is history now and does not concern us at this time—except as it may teach a moral for future use.

The man who speculates in food stuffs, while the country is at war, is certainly not acting with that patriotism which should actuate every American citizen. Speculation in honey is just as bad as speculation in any other article of food. Honey is not on the list of foods which the Government has taken over for control, but this is not any justification for the man who tries to speculate. He may for the present be safe legally, but he is not approved in the estimation of his fellow countrymen. To buy honey and hold it for double the price is morally a crime.

We suggest that the beekeepers of the country may render a valuable service to the country and to their fellow beekeepers by accumulating information on this sort of operation. Keep a careful record of the price at which you sell your honey to the buyer. Then, if you get information as to the prices at which this same honey is sold, and if this price is too high in proportion to what you received, report the transaction to the Department of Justice, Washington, D. C. Whether this will do any good we can not say; but it will help to prevent speculation if the buyers know that there are a lot of keen-eyed beekeepers interested in the fact that only honest profits in honey are expected.

What is a fair profit? This is a little hard to answer, for the profit must to some extent be in proportion to the risk taken; but it is safe to figure that any extensive buyer, one who handles honey by the carlot, is making too much if his profits exceed 10 per cent of the purchase price. Whether this is too much or too little, beekeepers may use this figure as approximately the right one, and any cases of a profit of 20 per cent or more should be brought to the attention of the Government authorities. Of course, the dealer who has to pay for bottles and the labor of bottling must receive compensation for these expenses, as well as

for the purchase price of the honey, but the total profit should not exceed 10 per cent of his investment in the transaction.

Let beekeepers form themselves into a vigilance committee for the prevention of honey speculation in 1918. If there are crooks in the honey business, such watchfulness should bring them to light.

We are ready to take our part in bringing the culprits to terms, and would be glad to know of all cases of honey profiteering that come to the knowledge of beekeepers anywhere. Such knowledge must come of provable facts.

If any of our advertisers are exacting unjust profits, they will be denied space in *Gleanings in Bee Culture*, on the receipt of proper proof.

MANY A SMALL beekeeper and many a beginner in beekeeping does not feel warranted in making



Here's a Way to Help.

an investment in a honey extractor. Not only is the cost considerable, but the small beekeeper may have so little work for an extractor that it cannot be made to "pay its way." Yet it is a necessity for any beekeeper producing extracted honey.

Here is a chance for all you beekeepers owning extractors to help the "little fellow"—just as many of you are doing. Do his extracting for him—and tell him you will do it for him. You can afford to do this (at present high prices) for about two cents a pound. Lend a hand in these days of food scarcity by helping "the other fellow" who may not be so well equipped as you are.

This need of many a small beekeeper points out the advantages that might be derived from better local organization of beekeepers. Where there are local organizations, it is a simple matter to have all extractors owned by members of the organizations listed, and the names and addresses of all owners of extractors willing to extract for others made known to those needing such services.

Burton N. Gates, head of the apicultural department of the Massachusetts Agricultural College, in a circular sent out to the beekeepers of his State, makes a timely appeal to those owning extractors as follows:

Have you an extractor which is not listed in this office? If so, are you willing to help your neighbor beekeepers? This office has a great many extractors listed, the use of which is offered nearby beekeepers who have none. An agreement blank will be sent those who wish to list their extractors. Inquiry for the service of an extractor may be addressed to this office. Your local agent in beekeeping will be able to help you.

This is a kind of practical help that a state department of apiculture may render its beekeepers everywhere—but more effectively where there are local beekeepers' organizations and county agricultural agents.

The beekeeper owning an extractor can

help local beekeepers not owning one, in just the same way—if he will—whether there is a local beekeepers' organization or not and whether a state department of apiculture is helping or not. How? By just telling his neighbor beekeepers who haven't an extractor that he will do their extracting for them, if they wish him to do it.

It's a neighborly and helpful kindness to do this—especially in these war times when the prices of equipment are high and when every encouragement should be given to producing every pound of honey possible.



IT IS A well recognized fact that the more alcohol a nation uses, the less sugar it requires.



Where We Get the Sweets We Eat.

Now that the consumption of alcohol in the United States is decreasing (and the

probability is great that soon there will be almost no alcohol used as a beverage), it is well for those interested in the production of any form of sugar to study the situation. From a purely selfish point of view, beekeepers ought to be anxious that the prohibition amendment shall pass. But this is not an article on temperance. It is barely possible, however, that in getting rid of one bad habit we may be taking on another. It cannot be expected that sugar will fill jails or asylums, but it may fill graveyards, unless the American people have care in their diet. The editors propose in two editorials to outline the facts regarding sugar in the diet of the American people in order that beekeepers may know where they stand on this important question.

The first lot of sugars that we eat belong in the class which we must regard as not fully helpful. Cane and beet sugar lead all the others in amount in the diet of Americans. We produce in the United States about five per cent of the sugar of the world; and the island possessions, Porto Rico and Hawaii, add another five per cent to the world's supply. But what we produce is but a small part of what we eat, for we import enough so that, when sugar is plentiful, we use about 90 pounds per capita. Directly after the Civil War the per capita consumption of sugar was only about one-third of this (but we used more alcohol), and the rate of sugar consumption has been on the increase ever since. Refined sugar is about as dead a food as one can well imagine. That it has food value we would not deny, and it has the advantage that, when it can be digested, it gives up its energy quickly. It serves no purpose other than the giving of energy quickly. The process of refining removes from sugar all mineral matter and all of the partially evolved sugar. That the human machine needs mineral salts is well known, and that we can digest the gums and similar matter found in raw sugar is equally recognized. However these are all removed, and in refined sugar we get simply

the stimulant sugar—quick results in energy but no lasting good. Probably the refiners are to blame for the fact that we use so much refined sugar and so little of the types that give permanent good, but the fact that sugar production can be carried on only on a large scale leads to such processes. If all of the sugar used in the United States were produced here, it is probable that we would use more raw sugar.

The craving for sweets has led to the making of a product of still less value, glucose. Good corn is used for this purpose. Glucose is the worst enemy of the beekeeping industry because it was formerly used as an adulteration for honey, but this day is happily past. Now it is an enemy of honey only in so far as it can be produced more cheaply and more uniformly. However if it were as good a food as honey, the beekeeper ought not to object to its use. In the early days of the glucose industry, before the later methods were employed, this product contained acids which were directly injurious to the human stomach, but these processes have been improved. Glucose now contains a large amount of gums. We can digest these, but all beekeepers well know that bees will die on such a diet, for their digestive machines cannot handle it. If we object to sugar because it contains no gums, to be consistent, perhaps we ought to commend glucose because it contains so much material of this kind. However the abnormal amount of gum results in a food which has little sweetening value. Glucose is in reality a food which has been partially converted into a substance which can be assimilated. So far as it has been prepared for human assimilation it is a good food, but it lacks the very quality desired in a sweet, sweetness. It is unappetizing, and, worst of all, is sold almost entirely as an adulterant. Doctor Wiley, while Chief of the Bureau of Chemistry, fought this product as hard as he could, not because it was a bad food but because it was not what it purported to be and because it was not called by its right name in most cases.

In the south-central and southern States considerable quantities of sweet sorghums are grown, and this source of sugar has greatly increased since the war began. In classing sorghum syrup with the less desirable sugars we do so, not because it is in any way injurious, but because it is usually an inferior product. The process of manufacture is crude, the product is so variable as to make its purchase a gamble; and furthermore it is subject to the same criticisms as cane and beet sugar, in that it is a sucrose, an uninvverted sugar which places a tax on the human stomach. However, we need not fear sorghum for in all probability its use will decrease again after the war is over. The appetite for this is, in a sense, a cultivated one, and certainly sorghum syrup cannot be called a first class article of diet.

Mention was made in the beginning of this editorial to the fact that the use of sugar

increases as the use of alcohol decreases. This is true all over the world. Every people seems to demand some sort of food from which they can get a quick response in energy, and the speed with which the American people live probably calls for an unusual amount of food of this type. We have learned, or are learning, that in using alcohol for this purpose we are getting results other than those of quick energy, for it leaves a trail behind. However, to increase the use of sugar as rapidly as we have is placing a strain on American digestion that we cannot stand without evil results of far-reaching importance. The products that have been discussed in this editorial are not of the type which do us good, but there are sugars which have better qualities, and these we will discuss in the next issue of *Gleanings*.

In Memoriam G. M. Doolittle.

Gilbert M. Doolittle died at his home near Borodino, N. Y., on June 3, 1918, aged 72 years, 1 month and 19 days. Altho Mr. Doolittle had suffered from serious ill health for a long time, his final illness was of the duration of only two days, death resulting from prostration due to the extreme heat of June 1 complicated with the results of contracting a severe cold. His whole long and useful life was spent on a farm in the immediate neighborhood of his birthplace. He was born the son of a farmer and beekeeper, and from his very infancy he was himself a beekeeper.

By the death of G. M. Doolittle, the voice of a great beekeeper-teacher has been stilled. For almost half a century he unceasingly taught the principles and details of good beekeeping thru the apicultural journals to a great audience of both beekeeper learners and beekeeper experts. Among all the correspondents of the bee journals no writer, perhaps, has been more closely followed than Mr. Doolittle. The readers of *Gleanings* thru many years have expressed in thousands of letters their appreciation of him as a teacher. So universally was his opinion sought that *Gleanings* Editor, early in 1900, asked him to conduct a department in *Gleanings* entitled "Conversations with Doolittle." In that capacity Mr. Doolittle has been a continuous instructor to the American beekeeping public for more than 18 years. He has been a regular contributor to this journal from the first year of its publication, 1873.

From his earliest years, Mr. Doolittle was a very close observer, and his statements as to the actual operations that take place within the hive (or what we now technically call bee behavior) can be regarded as authentic. He came to be generally accepted as an authority on all manner of domestic economy of the bees.

Mr. Doolittle was a large man in every way, of magnificent physique and command-

ing presence, the possessor of a fine voice, a ready and witty speaker, a good storyteller, and an excellent writer. In the telling of witty stories that illustrated valuable points in beekeeping, he surpassed any beekeeper we have ever known. At the great Buffalo beekeepers' convention in 1897*, we recall that he was frequently called on, and each time he brought down the house with roar upon roar of laughter and applause. His stories always had a good point.

One of Mr. Doolittle's most emphatic teachings was that the beekeeper must follow nature—that no beekeeper could succeed if he did not follow nature's rules. One of his chief theorems was that good queen-cells must be reared in strong colonies built up to the swarming pitch, and, as a corollary of



The late G. M. Doolittle preaching from the pulpit so long occupied by him.

this, he often said that good cells could not be built unless honey or sealed stores were supplied daily. He rightly and stoutly held that no queen-breeder could succeed unless he observed these two rules. He was first to prove that good cells could be built under only two impulses—the swarming impulse and the supersedure impulse. Good queen-breeders now recognize these two propositions as fundamental.

Altho Doolittle did not invent artificial queen-cups, he was the first man to develop the process. His method of making artificial cell cups started a new era in queen-rearing.

While cell cups are now made in a wholesale way by machinery, the basic principle is Doolittle's. He was also the first man to demonstrate that queens can be reared in an upper story with a laying queen below. All in all, Doolittle's method of rearing queens is essentially those of all modern methods now in vogue, and this one contribution to beekeeping has done more to make better queens and consequently better colonies than any other one thing in beekeeping practice. His book on "Scientific Queen Rearing" is acknowledged today as containing the best of modern methods of queen-rearing.

Years ago Doolittle originated the slogan "rich in stores." He talked it first, last, and all the time. He insisted that unless a colony at the beginning of the season had a great abundance of stores it would not build up as will a colony that has plenty of stores. Here again he was absolutely right, and was ever preaching this fundamental doctrine of good beekeeping. He developed a unique system of swarm control for the production of comb honey. This system is fully outlined in his book published under the title of "The Management of Out-apiaries."

Mr. Doolittle, while not original in the idea of melting wax by means of solar heat, was one of the first in this country to exploit the principle, and for years there has been on the market what was known as the Doolittle solar wax-extractor. He was one of the pioneers in the treatment of American foul brood. His ideas, away back in the early days, were entirely in harmony with those of Quinby, both of whom were absolutely right. During those days there were many false teachers and false teachings; but Doolittle's teaching and practice on the subject of foul brood during all that time were such as stand the test of present-day knowledge.

In the early days of the A B C of Bee Culture, Mr. Doolittle prepared, at A. I. Root's suggestion, a series of comments showing wherein he differed from Mr. Root. The fact that the two men saw things so nearly alike was remarkable. That they differed in details was only natural. The fact that he was so nearly always right was because he spent hours and days studying his bees—because he learned at the hive.

One outstanding feature of Mr. Doolittle's beekeeping was that he was not only a good instructor, but he put his teachings into successful practice. Some men, like Langstroth, the peer of all instructors, never could make money from their bees. Others, like Quinby, one of the best authorities in his day, have made money, even with box hives. Doolittle always profited from his bees, and always succeeded in getting crops.

Mr. Doolittle was more than a successful beekeeper and natural-history student. He was a big-hearted friend, a good citizen, and a Christian gentleman.

Long will the good live after him that he has done. Peace to him!

*See Gleanings—page 671 for 1897.

BEWARE FERMENTED HONEY

*Danger of Spoiling the Year's
Work by Not Waiting Till the
Bees Have Ripened the Honey*

By H. H. Root

DURING these days when the slogan of every beekeeper is to produce more honey, there is grave danger that quality may be lost sight of in the pursuit of quantity.

There are beekeepers who begin extracting as soon as the bees start sealing over the cells; others count it perfectly safe to extract as soon as the honey is one-fourth to one-half sealed; still others will not extract until the majority of combs are practically sealed, when none of them are less than three-fourths sealed.

Probably not one beekeeper in a hundred can tell by the taste or appearance whether

duced. The supreme test comes when honey is kept past January and February, on into March and April. The illustration shows part of a lot of honey

(granulated hard, when first bought) which, tho kept in a warm, dry room, fermented and expanded as shown. This honey was not extremely sour to the taste, and yet there was a very perceptible flavor of fermentation, practically ruining the whole lot. Some one extracted the honey too green, thereby doing the whole industry incalculable harm. The mere fact that the honey is granulated hard at first is not by any means proof that it is fully ripe. Remember that



Here are some results of extracting unripe honey.

extracted honey, when put up in cans and kept in a dry place, is proof against fermentation. So far as the taste and appearance are concerned, honey that is not quite ripe enough when extracted comes so near to that which is fully ripened that the beginner at least is tempted to think it all foolishness to wait until the combs are three-fourths sealed over. Right here is where the great mistake is made, for it is penny wise and pound foolish to extract honey not thoroughly ripened, no matter what the circumstances are.

It is impossible for all honey to find its way to the home of the consumer within six or even nine months from the time it is pro-

this particular honey was apparently all right in November.

Strange to say western honey is not as likely to ferment when kept over into March, April, and May as is eastern honey. This may be because the western producers are more careful, during extracting, not to take unsealed honey; or, it may be due to the drier air, prevailing in the west. If it is the fault of the beekeeper, let this fact be heralded from the house tops: one can not extract partially ripened honey without being the loser in the end. The first year a man may get as much for his honey as the other fellow, but he has done the whole industry (including the other fellow and him-

self) an injury, and sooner or later his reputation will suffer. A reputation may be created by consistent advertising, but that reputation cannot be maintained without producing the right kind of honey. It takes longer to live down a bad reputation than to build a new one from the start.

Think of carefully protecting the bees thru the winter, attending to them during the early spring months, wrestling with the swarming problem—and then, after a whole year of work, being so shortsighted at harvest time as to refuse to wait until the bees have entirely completed their product!



SOME years ago we were confronted with a new problem in beekeeping; viz., that of operating our three apiaries, about two hundred colonies for

APIARIES AT LONG RANGE

How the Work Can Be Done in a Few Weeks and at One Time. It is Possible and Practicable—If

By Helpmeet

comb-honey, located seven hundred miles from home, and with but five or six weeks available each year for the entire work.

The location furnishes a single short major honey flow, seldom more than a month in duration, from which the entire honey crop is gathered, and some minor honey flows from other sources but never enough for a surplus. Swarming occurs during the honey flow. The beekeeping year is divided, therefore, into two parts—the honey flow and the other eleven months. We count on being present during the honey flow, but do not see the bees during the other ten and a half or eleven months of the year.

With the old conception of beekeeping, involving frequent visits and numerous items of attention thruout most of the year, as a handicap, it required considerable careful planning to be able to provide in July all the items of attention a colony is expected to need until the next June. This is especially true in a location in which the seasons are replete with exceptions to the rule and where but few things really occur exactly as expected.

The Three Requirements.

The numerous items of attention formerly bestowed upon each colony from July until June were mentally rehearsed, then arranged in columns on the basis of their purpose. After some juggling three columns remained. (1) Those items either directly or indirectly concerned with stores; such as examining colonies to find which are short of stores, feeding, equalizing stores, etc. (2) Those items concerned with extra room for certain unusual colony activities; such as an unexpected but welcome fall flow, minor honey flows from spring flowers, and the heavy brood-rearing during spring. (3) Winter and spring protection.

If disease is not imminent or present, any other items of attention from July until the following June are not necessary to honey production in this location, altho they may be ever so interesting and attractive to the enthusiastic beekeeper.

the same time we supply sufficient room for a possible ten- or fifteen-pound fall flow that sometimes, though seldom, materializes, as well as room for the heaviest spring brood-rearing of the strongest colonies, in order that none of the colonies should want in either of these two requirements. In other words, we do our fall feeding and our spring feeding the previous July. At the same time we give extra room for a possible fall honey flow or spring honey flow as well as room for the heavy spring brood-rearing. This is done by supplying each colony with an extra hive body about two-thirds full of honey as a part of its permanent equipment. This extra hive body is removed only during the honey flow when comb-honey supers are on the hives.

This takes care of all the usual requirements of the colonies for the eleven months excepting winter and spring protection. Since the bees are wintered outside, this could probably also be given in July before we leave them. We have not tried this yet, largely because of a lack of time, and partly because it would seem too great a departure from orthodox practice. We feel that when we do our spring feeding and give extra room for spring brood-rearing the previous July, we have been sufficiently radical. We have the winter cases put on by unskilled labor, and, when we are able to have it done, we have them taken off just before our annual arrival.

Stores, protection, and room, the three requirements of the colonies during the eleven months, are thus provided, and we could do but little more to help the bees along in preparation for the next honey flow even by constant attention during our absence. This plan involves the giving of more stores than are needed sometimes and more room than is needed for extra colony activities some seasons. It means an extra investment in equipment and honey but saves much labor and fussing and, best of all, provides assurance that all the requirements of the colonies are supplied in ample time, which

Accordingly we supply each colony in July with enough stores to last until the next June, even the little or none should be gathered during this interval. At

unfortunately is not always the case when the needs are supplied as the emergency presents itself.

Thus far we have been agreeably surprised each year when making the first visit to the yards in June to find that the bees have prospered during our absence even better than formerly when they had attention throughout the year. The plan has now been in operation long enough to convince us that it is entirely practical. It has enabled us to reduce to a system the work of the eleven months. We wish this could be said of the remaining one month.

The Honey Flow.

We try to arrive on the scene at the beginning of the honey flow. By corresponding with beekeepers in the same locality we usually are able to time our arrival fairly well. But the uncertainties of a fickle climate sometimes badly upset our plans.

The first work in each yard is devoted to reducing each colony to a single story, clipping the queens and putting on comb-honey supers. We put most of the brood in a single hive body to be left with the colony and the combs of honey with smaller patches of brood and empty combs in the other hive body. The bees are shaken from these extra combs that are taken away, and the hive bodies containing them are piled up on top of the weaker colonies. They are piled up eight high, the piles being propped with fence rails to prevent their being blown over. These "piles" soon become exceedingly strong colonies because there is more or less emerging brood scattered throughout the various hive bodies. Later, after considerable of this brood has emerged, some of the hive bodies are slipped forward or back to allow additional entrances. The colonies in these "piles" do not attempt to swarm, and most of the combs are usually filled with honey, which gives us the extra story of honey to put back on the other colonies after the comb-honey supers have all been removed. This preliminary work is a hard and disagreeable job and usually makes us wish we were equipped for extracted-honey production, which would save all this shaking and sorting of combs.

Sometimes the colonies are so strong at this time that two comb-honey supers are needed at once. Some colonies are extremely touchy just at this time, responding to this reduction to one story by immediately preparing to swarm. This has led to a modified treatment of certain suspicious-looking colonies some seasons by which most of their brood is temporarily removed when they are reduced to a single story.

Swarming.

The remainder of the work during the honey flow is devoted primarily to a fight against swarming, which in some seasons is a battle of such proportions that honey production seems only incidental to the main issue of the fight. Fortunately, however, not all seasons are like this, and we sometimes have time to enjoy a certain

amount of freedom from the burdens that these ruthless taskmasters are able to impose upon us.

All colonies that are at all liable to swarm are examined each week, and, if the honey flow is rapid, the supers are examined and rearranged every three or four days, for we want each colony drawing foundation far in advance of its needs during the first half of the honey flow. For this reason we have never been able to handle our apiaries by visiting them only every ten days, as some beekeepers do.

We have no set rule for the treatment of colonies that are preparing to swarm. Like the physician we want to see the patient before writing a prescription. In general, when conditions of the colony and the character and advancement of the season are such that it seems best to do so, we remove the brood from the colony that is preparing to swarm. When another set of symptoms are present and the character and advancement of the season are such that a different treatment is indicated, the queen is removed. The subsequent treatment in either case is modified by existing conditions, but usually, when the brood has been removed, most of the emerging bees resulting from the removed brood are later returned to the colony. The colonies that have had the queen removed are requeened with a young queen just as soon as they will tolerate this without swarming again. As the years go by, we note a growing tendency to remove queens more often than in former years.

Other Work.

The sections are folded and foundation put into them as needed, the writer being boss and chief operator in this department. For this work, advantage is taken of rainy days, when both can help, even tho the sections may not be needed this year, for we want at least one super per colony ready to put on the bees when we arrive the following June. During poor seasons we are sometimes able to make repairs on the equipment and repaint some of the hive covers. A certain amount of requeening is attempted every year, largely in connection with swarm control.

Toward the close of the honey flow we begin a concentration of super work, first reducing the super room of each colony to one super. Later these last supers are removed and the unfinished sections assembled into a smaller number of supers which are returned to certain selected colonies. At this time each of the other colonies is given an extra hive body well supplied with honey. These are taken from the "pile" mentioned above. Thus, by a single operation, these colonies are supplied with all the items of attention they should need until next June, except packing for winter and unpacking the next spring. When all colonies have had their comb-honey supers removed and have been given the second hive body containing their stores, we say

"goodbye" to the yards until next June. This is frequently done before the honey flow has closed entirely, for we do not always have time to wait for this.

We leave the work of scraping, packing, and marketing the honey for others to do. In doing this we feel that we are being cheated out of some of the best fun connected with comb-honey production.

Results.

The crops of honey have averaged considerably higher since we have been so far away from the bees. Whether it is because the seasons are averaging better or because the bees are at all times better supplied with stores than formerly, we do not know. European foul brood is all around us and formerly took its annual toll in two of our apiaries, but none has been seen in any of our colonies since the inauguration of this system six years ago. We think this is largely due to the fact that our colonies are now stronger in the spring than they were under the old method of management. We do not care to recommend this method of beekeeping to those who can see their bees oftener. It takes too much of the enjoyment out of the work and makes it a strictly business proposition. On the other hand, we can not picture ourselves ever going back entirely to the old methods even tho the bees were all in a single apiary in our own back yard.

I have written this using the plural of the personal pronoun, meaning my husband and myself. I am a beekeeper by marriage only. I feel, of course, that my assistance is quite necessary to the production of a crop of honey and it is difficult to believe that it could be done without me. I have not gone along to help every summer; yet, strange to say, the season's work has been accomplished without my aid. At least it has been so reported to me, altho I find it hard to believe. Since I am not able to claim credit for all the work, I shall have to sign myself the

Helpmeet.

Comment on the Plan.

[The plan of working bees a few weeks during the honey season may at first seem to be impossible with the great majority of beemen in the country, and, while this may be true to a large extent, it is nevertheless true that not a small number of practical honey-producers in the country are doing something similar to this and have done it successfully. The plan is not here offered for general adoption, but only to call attention to what some professional men, especially school-teachers, are doing.]

Of course, the greatest objection to the plan is that foul brood might get among the bees during the nine or ten months when they were out of the direct care and supervision of the owner. But out of this nine or ten months should be eliminated four or five months while the bees are in winter quarters, when they need little or no attention. There remains only the danger

of bees contracting the foul-brood disease during the breeding season in the spring and in the fall just prior to being put into winter quarters. But immediately after the honey flow, a queen a year old will let up on her egg-laying, so there will not be as much breeding in August as there would be in the spring.

European foul brood comes on in the early part of the season as a rule, and, if it were in the locality, it might visit such an apiary not immune and out of the direct control of the owner. On the other hand, European foul brood with a good strain of Italians can be and is being controlled so that it is not a serious menace in most cases.

We have remaining the problem of wintering, which is not serious during average winters, providing the bees are put up by the owner exactly according to directions.

Colonies of bees are often lost during winter because beekeepers tinker with them too much in the fall, rearrange their brood-nest or disturb the honey. The plan here described involves the principle of leaving bees alone, as far as conditions will permit, and then packing them well for winter.

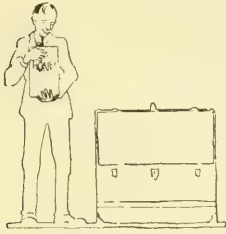
Since at the close of the honey flow each colony is given an extra hive body well supplied with stores, no feeding is necessary during the beekeeper's absence. The reader should note the importance of the extra hive body two-thirds full of honey as a factor in the elimination of superfluous visits to the apiaries. This reserve of stores is ready for the bees to draw upon whenever they may need feeding during the beekeeper's absence, thus becoming an automatic feeder. It feeds the bees when feeding is necessary, and also affords storage space during minor honey flows, all without any attention whatever from the beekeeper. This abundance of stores when combined with ample winter and spring protection and sufficient room for unlimited brood-rearing the next spring, should result in rousing colonies at the beginning of the honey flow without any other attention from the beekeeper.

The plan outlined above does not in any degree involve neglecting the bees when attention is necessary. In fact, it involves intensive care during the honey flow in supplying conditions at that time to insure the maintenance of the colonies until the beginning of the next honey flow.

The average person, however, will do well to go very carefully about adopting a plan like this on a very large scale. This is only another way of saying that the average person will do better to see the bees several times during the season; but it is not saying that some good beekeepers can not and do not do what is here described. Foul brood may be said to be the most serious obstacle, but a good beeman, if he has not too many careless neighbors, can eliminate either type of the disease, to a very large extent, while he is among the bees the five or six weeks during the honey flow.—Editor.]

DID you ever travel with honey?

With Honey, yes, of course, on your wedding trip; but I mean with the beautiful, amber, sticky, gaummy, viscid liquid that you put carefully into a can with the screw-top on so tight that, by George, it can't come open! You put the can then, of course, into the bottom of your trunk, pack beside it Shakespeare's Sonnets and the two books on beekeeping that you have had by you all summer, and fill in the rest of the bottom layer with shoes and underwear. Above that comes the overcoat which you have not worn, but which your wife insisted upon your having with you, your best suit, white shirts which have not



"You put the can then, of course, in the bottom of your trunk!"—

been out of the drawer since you came, some odds and ends of socks and underwear which you forgot to put in the bottom, and there's the next layer! Then you look around the room and throw in everything in sight—that's the top layer—the clothes you had on last in the apirary, collars, a few socks which appear in unexpected places, a bundle of your wife's letters, mostly unanswered, a nightshirt fished out from under the bureau, a bunch of neckties, a few soiled shirts, more books, a smoker that you forgot to pack with the bee things, and last of all, two bee veils. There you are, all packed except for closing the trunk! Of course, that's a very different matter, which requires the combined efforts of the landlady's husband, little boy, and you, for the trunk is a small one, and somehow things take up more space than they did when your wife packed them; but at last, when all three of you sit down hard, altogether now! the lock snaps and you are ready to go. After all, it is a simple matter to take a can of honey east to your sister, and think of her pleasure when she sees the clear liquid flow into her syrup jug, and her admiration and surprise when you assure her that you have been producing that fine honey by the ton!

Now all of this is what Mr. Bud Tomlinson did last summer when he had shipped his last load of honey to market and had put his bees in shape for winter, and there was no happier, more contented man than he in the world as he stepped on the train for Chicago. Little did he know what Fate had in store for him, lurking just around the corner, and with her usual irony about to use for his undoing the very source of his content—his honey! We have all been

HONEY, TRUNKS, and TROUBLE

*A Traveling Experience That
Many a Beekeeper Has Been Thru.
Poor Mr. Tomlinson!*

By Mary G. Phillips

Bud Tomlinson, who stepped off the train in Chicago that day as calm as a summer sea. His trunk, having come up to the city by the local on which he rode, was carried by the transfer company to the baggage station and dumped on their platform, where Mr. Bud Tomlinson expected to find it, to check east, when he arrived some time later.

Mr. Bud Tomlinson had taken his time about checking his trunk; he had had lunch, had seen a wholesale honey dealer, and most important of all, had bought a large Teddy-bear for his sister's baby, and some pale blue silk for an evening dress which he knew his wife had been wishing for. He hoped that he might squeeze these things into the trunk, opening it at the baggage station. There was no hurry—his train did not leave until evening, and the afternoon was still young. He walked about among the trunks on the platform, but failed to find his own. Where could it be? He knew it had come up on the local—it must be here. A solicitous baggage master offered help, but the trunk containing the precious honey was apparently missing. At length Bud's gaze suddenly fell upon a lonely piece of baggage standing on end in the middle of the alley.

"What's that?" he said. "That looks like mine, out there in the street!"

"That?" inquired the baggage man innocently, "Oh, that! We can't accept that! That darned transfer man brought it here and thought he'd put one over on me! Wanted me to accept a trunk all messed up with



"Wanted me to accept a trunk all messed up with something sticky from top to bottom."

something sticky from top to bottom! I told him where to go with that trunk, and shoved it back on his truck—then he got fresh and said he wouldn't have it—he was so full of the stuff that his hands stuck to the steering wheel and he almost ran a lady down, and if I wouldn't let him put it on my platform, he'd dump it in the alley! Well, after that you bet I wouldn't have it so he dumped it out there, and there it sets. It can set there till Doomsday for all o' me—I won't touch it, I know that—it's covered with something messy that sticks all over you. It don't smell so bad, tho. Don't know what it is, but it might be dangerous."

Poor Bud Tomlinson's heart sank as he

there—there never has been a beekeeper who has not once—just once—packed honey in a trunk and then—but wait! let me tell you of the unsuspecting

slowly walked out to have a look at what he felt sure was his property. It was—and the baggage man was entirely correct about the stickiness, for honey seemed to exude from every pore—if trunks can be said to have pores.

"What'll I do with it? Can't you send it on as it is?" he asked the disinterested baggage man. "It's only honey that has got loose somehow."

"We certainly cannot!" he replied. "We can't handle a piece of baggage in that condition! Can't you wash it off or something? There's a hydrant inside."

Bud looked around him. The outlook was not encouraging. Two small boys collected from nowhere and watched him with eager interest. Bud eyed them.

"Look here, do you boys want to earn some money?"

"Sure thing!"

"Well, get two buckets and carry water from that faucet inside out here to this trunk. Step lively, and I'll give you a dollar if you carry all I need. What's that? I don't care

"Two small boys collected from nowhere"—

where you get the buckets, just get them."

While the boys were gone, Bud took off his coat, laying it with his parcel containing the Teddy-bear and the silk on the edge of the platform, rolled up his sleeves, and opened the trunk. From the top edge of the lifted lid, dripped the limpid sweetness, but for the first time in his life Bud Tomlinson did not stop to admire the color and texture of his honey. The inside of the trunk lid

seemed to have been painted with a thick layer of honey, and the contents of the trunk swam in a sticky sea! How there could be sufficient honey in one five-gallon can to surround and encase every article in that trunk remains a mystery, but such was the sad state, as you probably know from experience. A little



"The contents of the trunk swam in a sticky sea."

honey goes a long way!

For two solid hours Bud Tomlinson lifted clothing from the trunk, dipped it into a bucket, sloshed it up and down until most of the stickiness had disappeared, and then with legs wide apart wrung the clothes and dropped them in a heap on newspapers spread at one side of the offending trunk. The boys enjoyed carrying bucket after bucket of water, slopping it over their legs as they came, and they were not in the

least abashed by the audience which gathered all too quickly for Mr. Bud Tomlinson. He was not enjoying himself, but with heroic fortitude he kept his eyes glued (or perhaps I should say "honeyed") to his work and made no reply to the facetious youth who begged him with tears in his voice to tell whether he was paying a bet or was this the way he preferred to do his washing. There was a cheer when the baptism of the overcoat took place, and another when he wrung the water from his best suit. As for the books—never before were Shakespeare's Sonnets so cloyingly sweet, never did bee books contain so much about honey! These Bud discarded as beyond hope of redemption from the stickiness which had penetrated most of the leaves, and the last he saw of them urchins were scuffling for portions to lick. When every

thing was out of the trunk, there was the empty honey can with the screw-top still tightly on! He knew he had made that safe! But in the side of the can was a gaping hole made by a nail protruding from the side of the trunk. This was no comfort to Mr. Bud Tomlinson, for had not his wife advised him to buy a new trunk before journeying again?



"Dipped it into a bucket, sloshed it up and down."

To soothe his anguished feelings, Bud lighted his pipe and sat on the platform, swinging his feet, to rest and smoke while the little boys poured their buckets full of water into the now empty trunk. When it seemed fairly clean inside, it was closed and more water poured over the outside, so that a fair-sized rivulet ran down the alley, and helped to disperse the audience. Just as the tobacco and the fact that the job was nearly done were bringing balm to his soul, Mr. Bud Tomlinson suddenly straightened into action and with a yell he dashed for a package floating lightly down the stream of dirty water! It was his package, containing one large white Teddy-bear, and one delicate piece of blue silk!

This was entirely too much for the equilibrium of even the dignified Mr. Bud Tomlinson, and he let go! He addressed no one in particular, but the facetious youth and the small boys who comprised his appreciative audience listened attentively to his remarks about trunks in general and their ancestry, about honey and baggage masters, about the futility of attempting kind deeds, and various other matters, and when it was over Bud Tomlinson felt better. He hurled and flung the damp garments from the heap on the paving into the wet trunk and last of all deposited on top a very wet Teddy-bear and a soggy package of silk. Then he went into the baggage room and checked that trunk east. That's about all.



CONVERSATIONS with DOOLITTLE

Conditions That Surround the Purchase of Queens from Breeders

[Our readers will be glad to learn that before his death, which occurred on June 3, Mr. Doolittle had written several "Conversations" in advance, and these will appear as usual for several months to come. His widow has written us that it was his custom, on account of the depressing influence of hot weather on his health, to write his articles for summer in advance of the coming of the heated season. Accordingly, Friend Doolittle will still "converse" with Gleanings readers for a time, altho his heartbeats have been stilled.—Editor.]

"The subject of superior stock is now the most interesting to me of any connected with the bee business. But there is one thing that I do not understand, and that is that so many queens sent out by breeders turn out to be poor when they are received by the purchaser. I have never advertised queens for sale, but have bought queens from nearly every breeder in this country who claims to have anything superior, and I am sorry to say I am generally disappointed. Should not the daughters be all that is claimed for their mothers?"

At present, the most promising field in which to turn our energies loose, is that of improving our stock. Our hives and method of management are probably not perfection, but they are at least fairly good, our method of putting up honey and marketing it may possibly be considerably improved; but, at present, too many of us look at bees in something the same way a storekeeper here used to buy butter—"it's all butter," he would say. The man who has kept bees for several years, trying different strains has reason to believe that there is quite a difference in bees, and so he sends for queens from those who advertise having such that are superior to most, if not all others. When they prove to be little, if any, better than those he already has, of course he is disappointed.

To my mind there are several reasons why the queens may not be as good as we expect from reading the advertisements. (1) The young queens may not have been so well reared as the mother was. (2) The young queen may not have mated as well as her mother. (3) Beekeepers who are accustomed to seeing queens in their own apiary are quite likely to be disappointed when they begin buying queens and having them come by mail. A queen sent by mail is quite likely to be small and insignificant looking as compared with a queen that is laying in a full colony. Not only is the shipped queen smaller, but there is a dinginess about her that is in striking contrast with the bright, fresh color of the queen at home on the combs of her own colony. Time and again some beekeeper who has purchased a queen and has had luck in introducing her,

and perhaps had luck in other ways, sits down and writes to some of the bee papers, not in as pleasant terms as our questioner has. Some buyers had expected a large, golden-yellow queen, and, above all, had no idea that the one purchased would not be accepted by the bees, as the directions for introducing had been followed as found upon the cage. But the queen was received and lost, and she was small and dark colored, and the accompanying bees looked little better than hybrids.

Does a purchaser expect to get a queen whose condition will be as good when received as when the queen was put into the cage? Just consider for a moment what a hard time those bees have had while they were cooped up in the little box and being rushed about for a week or more in a mail bag, with the temperature ranging from 90 to 100 degrees in the shade. Is it not a wonder that the bees are alive? Many mail bags are grabbed from a crane while an express train is traveling from 40 to 50 miles an hour.

Then, again, think of the effect on the bees when a mail pouch is thrown from the door of a car with the train going at the rate above mentioned. Some years ago I was standing just outside the door on a platform next to the station to see one of these trains come thru on the New York Central, not knowing that the mail was thrown off there from this train called the "Fast Mail." Some ten rods before it got to where I was standing, a door on the mail coach opened and a bag was thrown out. I saw it bound in the air, strike the farthest end of the platform, give two or three more bounds, when it proceeded to roll along, going slower all the while, and looking very innocent, but just as it looked as if it was going to stop, Doolittle was lying prone on the platform amidst laughter from others, while the bag went on a rod or two further, after knocking me down. I then and there thought of a batch of queens I had mailed the day before to start out on this train bound for Australia, and what would happen to others going to Ohio, Iowa, and California. Sometimes the mail pouch is left at some station in the hot sun with a temperature of from 110 to 140. And what is still worse, when queens are sent down into the southern tier of States, the mail pouch is sometimes placed on the top of a stagecoach and carried for a score to fifty miles into some back town, and all the time Old Sol is doing his best to cook the contents enclosed.

These things are often overlooked by the purchasers of queens, and a few are unkind enough to accuse the breeder of sending them inferior queens. It is hardly thinkable that a queen-breeder would select out and

FROM THE FIELD OF EXPERIENCE

knowingly mail an inferior queen. His reputation is at stake. "Handsome is that handsome does," and certainly, queens, when in the colonies and nuclei of the queen-breeder, do look and appear beautiful, and give promise (so far as he can judge quality from appearance and indications) of being superior.

There is one thing apiarists are always pleased to have done, and that is to have the buyer come right to the apiary and make his own selections. Then the queens can be seen in all their glory. Of course all who desire to purchase queens cannot avail themselves of this pleasure.

There is one more point that queen-buyers would do well to heed. Do not remove the old queen until the new one is at hand. Many breeders can and do send queens by return mail, but it is not always possible to do this. More often a week may pass with orders for only two or three, and the next mail bring orders for from 50 to 100. This upsets the "by return mail" business.

Borodino, N. Y. G. M. Doolittle.

HOW QUEENS MARK THEIR HIVES

Proof That "Sense of Direction" and Not Color Directs Their Flight

It is generally believed that a queen has a good eye for color, and that this will enable her to find her hive when she returns from the wedding flight, if the hive in which she belongs is of different color from those near by. I have done considerable experi-

menting along that line, and, while I am going against popular belief, my experiments have led me to believe that color plays little or no part in aiding the queen to find her way home.

That color does help the worker bee I have proved to my own satisfaction. Here is a typical experiment: My hives are close together. One hive near the center of the apiary contained a virgin queen. In order to help her identify her home, I took red chalk and colored the front of the hive a bright red. The worker bees came home, but they did not like the looks of that red thing right where their home was. Yes, that was the place all right, but they were positively certain their house was white, so after careful investigation they decided to risk one that had the right color, even if it was not exactly in the right spot. This they did with the result that at least a pint were killed and dragged out.

So arguing along this line, one would feel safe in assuming that the queen also would closely observe color. But, as stated, they don't do it. In fact, I have laid down many a program that the bees ought to follow, but they would not.

Last season for lack of room, I had my mating nuclei close together, hanging eight on a square stand so that two would face each way. These stands were about six feet apart. In order to help the queen locate her nucleus, I painted part of the fronts different and distinct colors: bright red, green, white, black, and yellow. I have stood by these and witnessed many queens return, or try to, and I believe they are guided by an



Where Jay Smith Observed Queens Marking Their Hives.

FROM THE FIELD OF EXPERIENCE

instinct or sense of general direction and not by color or any little distinguishing marks.

The queens would invariably come back, go up to the entrance of their own hive or of the one nearest to it, and go in one or the other, regardless of the color. Frequently they would go behind the hive and try to get into the screened ventilator. I found my nuclei were too close together and the loss was over 25 per cent. In another part of the yard I painted them all one color, and the loss was no more than with the ones with different colors.

That queens are led by a general sense of direction, rather than to any fine detail, I have noticed many times. For instance, if a queen has a flight from two different localities a number of feet apart, when she comes back from the second she will return to neither, but usually go halfway between the two.

I have had virgin queens that had had a flight escape from my hand when I was taking them to another hive. They would fly away with the usual circling, but would return somewhere between the place from which they escaped and their old home.

The accompanying photo will illustrate a case that occurred last September. I had a batch of queen-cells built in hive No. 2. I intended to make a photograph of these and therefore took extra pains in grafting them so all would be accepted. I think all but one in the 40 were accepted and were being drawn out into long beautiful cells.

When the day came for them to be sealed, I looked at them and was astonished to find every cell not sealed but every larva removed and all royal jelly cleaned out. I knew that meant they had a queen, and I was dumbfounded to know where she came from as the hive was made queenless and broodless only a few days before. I soon found the queen and recognized her as one from hive No. 1. On recalling an incident of a few days preceding, I soon saw how the queen from hive 1 happened to be in hive 2. This is how it occurred.

Hive No. 1 contained my breeder, and the bees were superseding her. After the virgin was several days old, I thought I would remove her and let them raise another. So I took her to a queenless colony, No. 3. In trying to introduce her, she escaped and flew away. After I had stood there some time, she came back and I caught her. I believe this was her first flight. I thought I had better not try to introduce her and therefore took her back to her old hive, No. 1. Now she had had a flight from No. 3, but not from No. 1. Next day she took her wedding flight and was mated. In returning her instinct took her halfway between No. 1 and No. 3, so she entered hive No. 2. This happened to be my cell-building colony,

and, being queenless, the bees accepted her much to the detriment of my cells. In a day or two she began to lay, so I left her there in her adopted home. Jay Smith.

Vincennes, Ind.

[Mel Pritchard, our queen-breeder and a very close observer, says that he has always supposed that queens mark their location each time they take a flight; but he says he may be wrong, as he has had no experience with queens that have taken flights from two or more locations. Mr. Pritchard also says he had supposed that queens took note of color, but that he has no proof of this.—Editor.]



SHALLOW VS. DEEP SUPERS

This Man Doesn't Agree with J. E. Crane and Other Deep Super Advocates

There has been some discussion as to the advantages of the shallow frame in producing extracted honey. Keep it up until we have a better argument than that we just happened to have this or that equipment. I consider the above subject a very important one just now because many are changing over from comb to extracted honey on account of the high price of the latter. Then there is the beginners' class, which will be large, as beekeeping, without a doubt, will take a big jump in the next few years.

The beginner will be reading everything he can get hold of, from the best textbook down to the Government bulletin, after which he will be none the wiser so far as a definite decision is concerned. If a person wishes to start in a new business and seeks a little information from those of experience, he will be advised above all else to begin right, because he will be hampered all thru by making a wrong start. But when such men as J. E. Crane say that the shallow frame is a first-class nuisance, it certainly is a stunner, and I think some have not got over it yet. Others will say that it can never be decided which is better—the shallow or Langstroth size, on account of that big word "locality." But that is just where the shallow frame comes in. It can be adapted to a strong flow or a light flow of honey—to a large colony or a small one.

In my early beekeeping experience I used the Langstroth frame exclusively, mainly because the large producers used it; but things have changed greatly.

The auto truck is one of the greatest agencies for improvement that has come up for a long time, especially for beekeeping. This truck affords rapid transportation facilities in hauling honey to a central extracting station, an advantage which is practically impossible with the Langstroth size of frame, since the deep Langstroth frames flop back and forth, bruising and breaking

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the combs. An apiarist who uses shallow frames can drive the auto truck right into the beeyard and load up the honey after smoking and jouncing out the bees, the jouncing part being impossible with large combs. The frames should be self-spacing, with projections wide enough so that eight frames will fill a ten-frame super. It is impracticable to have wider spacing for the Langstroth frame than the regular equipment, as they would make all kinds of trouble by getting mixed with the brood-frames. There can be no hand-spacing in a well-equipped beeyard. A great saving is in the foundation that can be used. Full sheets of section foundation fill the bill, cutting the cost nearly one-half, if you take the time of wiring into account, wiring not being needed in shallow frames.

I find that queen-excluders can be dispensed with, as the queen is crowded out during the honey flow; and if there should be any brood left it is usually capped. By using an extractor with large pockets, the extracting may be done nearly as rapidly, since two shallow frames may be placed in each pocket. The great argument against shallow frames is the extra handling, which is only in uncapping and extracting, as no separate super frames are handled at the beeyard. If you have your extracting-house arranged right, they can be handled very rapidly.

Hamburg, N. Y. Elmer Gressman.

[Many beekeepers do not recognize this last objection, believing they can uncap two shallow combs in fully as short a time as one deep one. We think shallow frames should, however, be wired to prevent the combs breaking when extracted.—Editor.]



WHY WIDE SPACING

Saves on Investment and Time and Makes the Colony Strong

Altho most of us agree that 1½ inches from center to center is correct spacing for our frames before they are filled with comb, in my practice after they are filled, I find so many advantages of wider spacing that enumerating them may be of service to a few readers of *Gleanings*.

Wide spacing eliminates at least one comb from each story, thus saving at least 10 per cent to 12 per cent on the investment for combs, and in no case have I observed any necessity whatever for the missing frame.

It makes one less frame to handle per story, which in a day's work amounts to a considerable saving, and, in a season, to a great deal. Also, it is nearly always much easier to get the first frame out.

It gives just the right amount of new tender wall between the old cocoons of the brood and the cappings to allow the capping knife to work to best advantage. What is

nicer than uncapping good, thick, well-filled frames of honey?

One frame less per super affords quite a little more storing room. There is one less bee-space to be left vacant. This is a slight advantage with strong stands.

Many beemen think they obtain more wax in the cappings by wide spacing. I never could satisfy myself that it amounted to much, one way or another. Below the cappings the walls of a cell are extremely thin—like the thinnest tissue paper. Leaving out one frame gives just 1½ inches more of this thin wall distributed over the different combs. I can't make myself believe that it amounts to very much—at least not much more than the cappings would from the frame that is left out.

Some beekeepers claim that wide spacing reduces swarming. I firmly believe that it does myself; and I have a number of good reasons for believing it.

A brood-nest spaced wide requires a larger number of bees to maintain the same sized cluster. That is, the cluster must be composed of more bees and less comb, and the difference is quite appreciable, particularly in the spring. This tends to prevent chilled or overheated brood, and allows a considerably larger force of nurse bees to care for a given quantity of brood, as well as a larger proportionate number of field bees to procure pollen, water, and nectar during the early brood-rearing period. I notice, in spring, the bees frequently have a tendency to extend their brood-nest beyond what they can properly care for, which results in chilled or partially starved brood. I notice this condition most frequently among bees of poorer hereditary habits or tendencies. I find that my best stock nearly always have lavishly fed brood, and it is their habit of properly caring for their young, keeping them warm, and giving them plenty to live and grow on, to which I attribute their better working qualities, individually longer lives, and general excellence. We do not expect good results from any kind of poorly raised stock—why expect bees to break the rule. This habit of being "good mothers" is almost entirely hereditary, (altho of course influenced largely by weather and circumstances) but it is very largely encouraged and helped by the wide spacing, and may be controlled to a considerable degree by contraction of the brood-nest.

In putting your bees away for the winter, give them plenty of good stores and nice, wide spaces to cluster in. They can maintain their temperature much better, and, it seems to me at least, that they come out in noticeably better condition in the spring.

Of course, the bees, and beemen, like the 1½-inch spacing for getting combs drawn out, but hereafter, for my part, I want my combs 1½ to 1½ inches apart.

Overton, Nev.

T. W. Riggs.

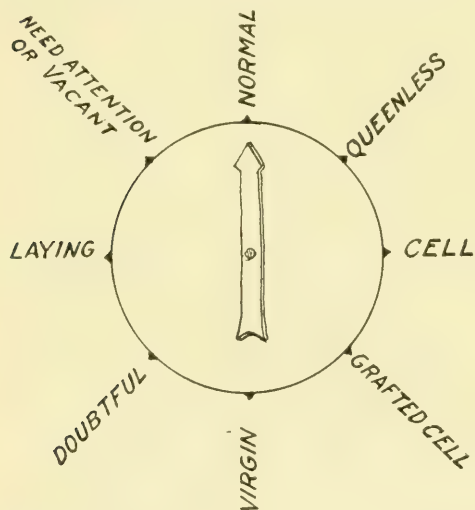
FROM THE FIELD OF EXPERIENCE

TO MARK THE HIVES

A Simple, Effective, and Inexpensive Plan is Here Offered

Many have been the ideas suggested and used for outside markings to hives and queen-rearing nuclei that would indicate the internal conditions of such when last examined. Half-bricks, sticks, stones, and even dirt have been used as markers, but all were faulty.

One of the best markers, and one which most nearly approaches perfection, was an index card put out and used for many years by A. I. Root. These cards were about the size of an ordinary postal card; were printed on heavy manilla paper, and were intended to be tacked to the front of the hive or nucleus when in use. Two dials were represented with a bent pin in each as markers—



one to indicate the date; the other, internal conditions. Objections to these cards were that they would become weather-beaten and fade out with a season's use; the pin pointers would become loose and not stay where wanted, and these cards could not be read at long range. The half-bricks were about the next best thing, as they were less liable to be blown or knocked off, and by certain positions could be made to tell about all we would want to remember. These, however, were bothersome.

After using the foregoing for a number of years there occurred to me a method of marking that could be read from a distance—one that would stay put, always be in place, and yet not be cumbersome or in the way of manipulations while working in the hives. Accordingly I attached to each hive a small index hand that might be turned in a circle, and from any place in the apiary one could read the condition of any nucleus

when last examined. For ten years now I have used this indicator, and I, together with several other queen-breeders, have found that it just about fills the bill; and for simplicity and ease of operation it has no equal.

A small piece of board four or five inches long, about an eighth of an inch thick, and pointed at one end like an arrow is used as an index hand, a common nail being placed thru the center and driven into the front of the hive and bradded on the inside. No circle or figures of any kind are made on the hive; but of course, when the indicator is turned it describes a circle, and this circle we imagine divided off into degrees like the points of a compass or face of a map. For convenience we call the top of this imaginary circle north; so when our index hand points toward the top of the map or hive we are to understand that our hive is in a normal condition, with tested queen, etc. If turned one-eighth of a turn to the right we have "queenless," and the indicator stands on northeast. The next step in the operation will be to give a ripe cell; and when so given we again give the indicator an eighth turn, and then it stands on east, and means "cell." Should the index be on a full colony which is a cell-builder, we would give the indicator another eighth turn to the southeast, and that would mean "cell-building." Again returning to the nucleus, if upon examination after having given "cell," we find a virgin on the combs we turn the marker to south (straight down), which means "virgin." If upon the next examination we do not find her laying, and feel an uncertainty as to her presence, we turn to southwest, which is termed "doubtful"; but in all probability we have overlooked her ladyship, and the next time we open the hive we shall find her laying. Then the indicator is given another eighth turn when it will point straight west, indicating "laying queen." We have now reached the seventh point on this imaginary circle, and there is but one more, which we seldom use, and that is northwest. So when the hive is not in use, or our nucleus absconds, gets robbed out, or needs rebuilding, we place the indicator on this point.

Beeville, Tex.

W. H. Laws.



For my own use I prefer a self-spacing frame, with the top and the bottom bars, as well as the end pieces, all one inch in thickness—a frame somewhat similar to Dr. Miller's. I use little 1/2-inch dogwood twigs. Lengthwise thru the pith, I drive thin nails into the upper ends of the frames, thus furnishing horizontal projections which space the frames nicely. By this arrangement there are no grooves, no trouble about spacing, and no metal against which to bump the honey knife during extracting time.

Fishers Ferry, Pa. Freeman E. Reeder.

J. E. CRANE, I'm quite in sympathy with you and Editor Root as to the matter of breeders and tested queens, page 234. You say, "A queen can hardly be fully tested in much less than a year." Isn't that a very moderate statement? The average queen that is sold as tested is born hardly later than August. In that same year you can tell practically nothing about what her bees will do at storing, and must wait till the close of the season the following year, and at that time she will generally be a year old or more. But I think it safe to say that 9 out of 10—I'm inclined to say 99 out of every 100—queens sold as tested, are less than two months old when sold. And that's all right according to the agreed definition of a tested queen, which is, "A queen whose progeny show she has mated with a drone of her own race." According to that a tested queen need be only 21 days older than an untested one. But you and I would want a good deal more than that to satisfy us with regard to a queen fully tested. Yet there may be said to be something quite definite in the word "tested," as generally used. But when we come to the term "select," we're on uncertain ground. What is a "select tested queen," anyway? Suppose a man has 100 queens that have begun to lay, and the markings of their worker progeny show that each has met a drone of her own race. How many of them may be called select, and why? If the best looking one of the lot is chosen as select, the conscience of the seller would no doubt be easy. And it would be about as satisfactory if the best of the remaining 99 should be chosen. And would he keep on selecting the best one of the lot on hand until only one was left, thus making 99 out of the hundred, or at what point would he stop and say I have no more selects? The problem is too much for me.

* * *

I move a vote of thanks to Miss Iona Fowls for her very full and satisfying discussion of Demaree and similar plans, and especially the diagrams, page 338. Miss Fowls raises the question whether any of us know what the Demaree plan is, and whether it should be credited to Demaree. When any plan is devolved, it is generally the case that it is more or less a putting together of things previously known, and if Demaree was original in any one item, or in any new combination of old items, it seems fair to apply his name to the plan, especially if he is active in its promulgation.

As to what the Demaree plan is, I have been in the habit of thinking of it as the plan of putting the brood above an excluder, with the queen and empty combs or

STRAY STRAWS

Dr. C. C. Miller

foundation below the excluder. Was not Demaree original in doing that? To be sure, Langstroth antedated Demaree by 27 years in the matter of

putting brood in an upper story, but he didn't put the queen in the lower story, and Demaree did. Langstroth left the queen with the brood in the upper story, and says she was **almost** certain to descend and lay her eggs in the new combs. There was no "almost" in Demaree's case; he put the queen in the lower story with the empty combs, and **made sure she would stay there.** That use of the excluder made all the difference between success and failure as a reliable method of prevention of swarming. Langstroth says that as long as bees have an abundance of room below they very seldom swarm. How seldom? Honest Injun, Iona, just between you and me, do you believe that it would be so seldom that you would feel safe to leave an out-apiary for a week or more without an excluder in the yard and expect to find that not one colony in ten had begun to think about swarming? I may say in passing that I gave some trial to the Langstroth plan, and would not think of placing dependence on it. Sometimes the brood-nest was above, sometimes below; oftener it was partly in both stories.

As to the Fowls plan. I like it—much. I like the brood hoisted away up. Not that it makes any difference about swarming. For if there is no thought of swarming with the brood in the second story, as is the case with many, how can there be less thought of it with the brood higher up? But I like the abundance of super-room, and the brood so easily got at to kill cells. Moreover cells are more sure to be started and matured so far from the brood-nest, and often this is desirable.

* * *

"Grace Allen informs us on page 287," says J. E. Crane, page 350, "that she picked the first clover blossoms March 31. It is May here in Vermont and we are yet looking forward to some time in June before we shall enjoy such a pleasure." In this northern edge of Illinois I picked the first white-clover blossom May 22. All of which goes to show that the season is somewhat mixed up. At any rate, I may say of the season here what Mrs. Allen, page 353, says of the season in Tennessee, "This has been an absurd sort of season here, so far." Some of the time it has been one of the most backward seasons I ever knew, yet I think I never knew clover to bloom quite so early. I can always count on the beginning of storing ten days after the first bloom, if there is any storing at all from white clover. It is close to that time now, clover seems

abundant and promising, and I am anxiously uncertain whether next week I shall be giving more supers or feeding against starvation.

* * *

Dr. Phillips is quoted, page 347, as saying that if we had only the flowers from which surplus is stored there might be no surplus, the plants that each yield only a little making a considerable total. I suspect that Dr. Phillips had in mind not only the amount of the yield, but its **continuity**. Take two localities, A and B. At A there is a heavy yield from a single source, and nothing at all from any other source thruout the season. At B there is a much lighter yield from the same source A has, and small amounts from numerous other sources thruout the season, the total amount of nectar secreted being less than the total secretion at A. Yet the surplus stored at B may be greater than A's surplus. Altho B's total be less than A's, it is continuous, keeping up constant breeding, while at A breeding is more or less neglected until the big rush is on, and then there are not enough bees for it. Even if breeding should be kept up, the bees at A can do only so much gathering, anyhow.

* * *

After reading the excellent instructions for imbedding wire, page 344, you may sigh because you haven't the electric current. Well, you can follow the plan devised by Miss Emma Wilson, and given to the public some years ago. Indeed I suspect that the electric plan is an outgrowth of Miss Wilson's plan. Instead of electricity you use the heat of a lamp or oil stove. Take your wired frame, holding it flat, and lay your foundation **upon** the wires. Move the frame slowly over the heat, following the direction of the wire, letting the tips of the fingers of one hand press lightly upon the part of the foundation over the heat. A little practice will teach you how fast to move and how much pressure to make.

* * *

A. I. Root, please pardon an old friend for insisting upon exactness in quoting scripture. You say, page 370, "The dear Savior, when he made a little repast for his followers, gave them fish and honey in the comb." Instead of his giving to them, didn't they give to him in response to his request? In Luke 24:42, we read, "And they gave him a piece of a broiled fish, and of an honey-comb." Even this needs revision, for in the revised version we read: "And they gave him a piece of a broiled fish," no mention being made of honey.

* * *

"In order to prevent after-swarms from the old hive, all queen-cells except one may be torn down, and in a week or so the colony examined for eggs," page 368, June Gleanings. I wonder if it wouldn't be better to make that "two weeks or so." It is generally counted that a prime swarm issues about the time the first cell is sealed.

It will be at least a week more before the virgin emerges from her cell, and she does well if she begins laying when eight days old. That makes two weeks and a day after the prime swarm before eggs are laid, provided everything is sped up in good style. But things do not always go so fast as that, and besides it is not so easy to find the first few eggs that are laid; so I wonder if it is best to look for eggs much short of three weeks after the prime swarm issues.

* * *

"If I should remove a queen from a hive for a few days, keeping her in a nucleus, could I return her to her original hive without introducing?" is a question asked, page 365. I should say it depends. If, after her removal, another queen is introduced, then the old queen can be returned only by being introduced just the same as she would to a strange colony. But if no other queen is introduced, and queen-cells killed, the old queen may be safely returned with the nucleus in about ten days without any precaution whatever. I've tried it dozens, if not hundreds, of times. I don't know that the bees remember her at all as their own queen, for I have sometimes given them a nucleus with a strange queen with equal success. Incidentally I may mention that this takes all the swarm out of a colony, whether it contemplates swarming or has already swarmed.

* * *

In a certain time after a prime swarm has issued, if no eggs are found in the mother colony, it is considered advisable to give a frame containing eggs and young larvæ, page 368. That is supposed to hurry up the young queen if she is slow about laying, or to show that the colony is queenless if queen-cells are started. I followed that practice for years in the case of young queens in nuclei. Then some of those New England fellows said that giving such a frame was quite likely to cause the disappearance of the young queen. Since giving up the practice I **think** I've had fewer losses, but I'd like to be sure. One thing I may mention is that it is not always certain that a nucleus is queenless when cells are started on the young brood given, for sometimes I have found cells started and then found the young queen laying all right a few days later.

* * *

You seem, A. I. Root, to be taking a good bit of comfort from eating baked apples, page 370. I eat them daily before dinner, but I take them raw. I get the vitamins, and are they not lost in the baking? In spite of that, your way may be best for you and mine for me.

* * *

"That queens lay more eggs during the first year than in any other" is spoken of as "a well-established fact," page 336. I wonder, now, I wonder. Some have thought they laid more the second year. Have we anything more than guessing, either way?

THIS has been a wonderful spring to study the wintering problem, especially for the bee inspector. In the best yard I have seen so far, the bees were wintered in a large dry cellar.

* * *

We have had two or three weeks of good May honey weather and bees have stored enough from fruit bloom and dandelions to carry them well into clover. The dandelions are indeed a blessing in building up our colonies for the summer harvest.

* * *

I have no disposition to call Herbert Coffee a liar because he says he had an Italian queen leave her hive and enter a black colony and take possession. We have had a black queen enter an Italian colony and perform the same trick, much to our disgust. See page 363.

* * *

Commend me to E. S. Miller for his cheerful, hopeful spirit in regard to European foul brood, see page 277. To the brave, hopeful, courageous person who is willing to work with his bees, it is not so bad; but for those who never open a hive from one year's end to another, it is indeed "a calamity."

* * *

That is a most interesting article by Iona Fowls, page 338, on the "Best Swarm Control Plan." I take it that the plans given are for hives run for extracted honey mostly or wholly. It seems to me that where section honey is to be produced the placing of supers of brood above would be apt to injure the appearance of the surplus honey.

* * *

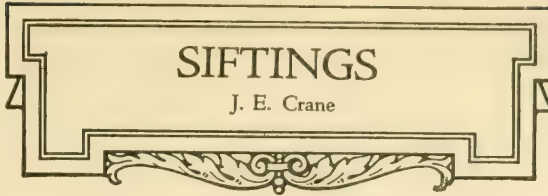
The Editor calls attention on page 332 to the variation of nectar secretion on different soils. This is a matter that has not received from beekeepers all the attention it deserves. The variation is very noticeable here in Vermont, the heavy clay soils in the Champlain Valley yielding far more honey than the lighter soils farther east.

* * *

George M. Darrow of the Agricultural Department at Washington has been detailed to the War Department for work in the agricultural re-education of soldiers returning from France to base hospitals. He proposes to instruct them in beekeeping, as well as along horticultural lines, which will doubtless add many to the ranks of the beekeepers of our country.

* * *

The advice of Dr. Miller, on page 348, is worth more to any young beekeeper, if followed, than any thing else in the June issue



of Gleanings. He says, "abstinence and moderation in youth pay big dividends in old age," and he is right. His experience reminds me of the life of

Ludovico Cornaro, who lived in the sixteenth century. It will well repay any one who desires to live long and well to look it up. It surprises me more and more to note in regard to those who have given a free rein to their appetites, how large a number have dropped out in the race of life long before they should.

* * *

On page 161 Mr. Byer says he finds no difference whether bottoms of hives are packed or not. My experience has been the same, and I have had more than a hundred so packed for many years.—Later. The foregoing was written the last of April or early in May. Since then it has seemed as tho this year the hives packed on bottom have come out better than those without bottom packing.

* * *

In a paragraph on page 350, Gleanings, June, I am made to say "It has seemed to me bees will spread their brood faster when allowed to put their brood into several combs." What I intended to say was that they would spread their brood faster when not allowed to use several combs but compelled to confine their brood to two or three combs until they were well filled.

* * *

J. L. Byer on page 358 reports that his bees which were fed on sugar syrup are in much better condition than those supplied with honey for winter stores. The strongest, he tells us, were ready for supers even before fruit bloom. This doesn't look as though the sugar syrup was a very bad winter diet for bees, as we have sometimes been led to believe. [And yet the same Mr. Byer a few years ago took the Editor to task for favoring sugar syrup as against natural stores. A severe winter like the past is an eye opener sometimes.—Editor.]

* * *

Dr. Miller informs us, page 349, that he would never be caught but once without combs of sealed honey for spring feeding. He says further that these combs may be "often, if not generally, of fall, dark honey." Now say, Doctor, I have had no fall honey stored by bees these fifty or more years, and only in two or three seasons any late summer honey. By the middle of July to the first of August the game is usually up with us, and the solid combs of sealed honey must be secured before this time if at all, so we prefer to eke out a short winter supply with sugar syrup.

DID you send for that canning bulletin, No. 839, about which I told you in the last issue? You really cannot afford to be without it.

Many women have the idea that vegetable canning is difficult and entails a great deal of hard work. I always thought so myself, especially when it was supposed to be necessary to use the intermittent method of sterilization. But last year I started early in the summer canning our garden surplus, a few cans at a time, and by winter my storeroom with its rows of attractive-looking canned vegetables in the clear glass cans was the pride of my heart. And I learned to really enjoy canning, work which I had always disliked heartily before.

In the first place, don't attempt too much canning at one time. I started out to use a washboiler with a wooden rack in the bottom holding a dozen cans. By the time those were filled with cleaned, blanched, and cold-dipped vegetables and the boiler was filled with water, I was at the point where life did not look at all attractive. And when the period of sterilization was over and I had removed part of the cans, the wooden rack had aspirations to float on the surface and upset several cans. Then there was the task of emptying the large boiler. After that washboiler experience I made a trip to the hardware store to hunt a utensil deep enough to hold four quart jars on a false bottom, and found an enameled stock pot which seemed to be just the thing. Other housekeepers have used new garbage cans or large lard pails successfully. Whatever you select should be deep enough to hold the cans submerged in water to the depth of at least one inch and should have a close-fitting cover. If you can procure the individual wire can holders with handles, they are most convenient. With their aid it is easy to can vegetables of different kinds requiring different periods of sterilization. A wire cake cooler will do very well, but you need some sort of tongs for removing the cans from the water bath. A wire frying basket is convenient for blanching and cold dipping the vegetables, but a square of clean cheesecloth will do just as good work.

That stock-pot canner of mine worked overtime last summer. There was scarcely a day that it was not on the burner of the gas range with two to four jars of vegetables in its depths. It was not much work to prepare the vegetables for canning along with the dinner vegetables. If you are fortunate enough to have growing girls in your family, let them do part of your canning. I know a seventeen-year-old boy, who thought his mother was not canning enough of a certain favorite vegetable, and so while she was

OUR FOOD PAGE

Stancy Puerden



taking her afternoon nap and bath he took her canning time-table, and when she came downstairs there were several cans of vegetables processing in the

cooker. Those vegetables and others which he later canned kept perfectly.

Here are some of the vegetables which we found especially delicious canned: string beans, peas, asparagus, lima beans, young carrots, beet-top greens, beets, both the small ones canned whole and the larger ones sliced. Canned corn is also very good, but we prefer it dried. Beans and corn may be canned together for succotash. Two vegetables which the Puerden family voted as not worth while canned were cauliflower and summer squash. While they did not spoil, the flavor of the cauliflower was unpleasantly strong and the summer squash was overcooked and insipid. Root vegetables which keep well in a cool cellar I made no attempt to can. My mother worried about my spending so much time canning. She had always heard vegetable canning was very difficult. When she came back from the South in the spring and we invited her to dinner and served some of our canned beets, she said, "These are the most delicious canned vegetables I ever ate. I would not know that they were not gathered fresh from the garden."

It would be easy to fill four pages with canning talk and then leave much unsaid. I want to emphasize just a few points and then follow with a time-table for the hot-water-bath method.

Do not try to can anything but fresh, clean vegetables. The sooner you get them into the cans from the garden, the better. Test every jar by partially filling with hot water, sealing and inverting it. Blanch according to the time given in the table and dip immediately in and out of cold water, the colder the better. Drain the cold-dipped product, peel, if necessary, and pack carefully in the clean jars, adding one teaspoon of salt to every quart jar of vegetables. Fill the jars of vegetables with boiling water, or if fruit, with boiling syrup, adjust rubbers and covers and partially seal. Sterilize the product by immersing the jars in boiling water to the depth of at least one inch for the required length of time, counting from the time the water begins to boil. Remove the jars and complete the seal, inverting to cool. The table which follows is for quart jars. For altitudes 4,000 feet or more above sea level, add 20 to 25 per cent more time to this schedule.

To can asparagus tips, blanch 5 minutes, cold dip, and sterilize 2 hours; string beans, okra and green or ripe peppers, blanch 5 minutes, cold dip, and sterilize 2 hours; carrots, beets and other roots or tubers, blanch

5 minutes, cold dip and peel or scrape, if necessary, and sterilize $1\frac{1}{2}$ hours; lima beans, corn and peas, blanch 5 to 10 minutes according to age, cold dip, and sterilize 3 hours. The corn should be blanched on the cob. Greens of all sorts, blanch in steam 15 minutes, cold dip, and sterilize 2 hours.

In order to avoid a condition known as "flat sour" in such vegetables as asparagus, peas, beans, and corn, use no vegetables which have been gathered more than six hours, and then blanch, cold dip and pack one jar of product at a time and place each jar in the canner as packed. The first jar will not be injured by the extra cooking.

Fruits may be prepared and packed in the jars without the preliminary blanching and cold dipping except in the case of certain hard fruits such as hard apples, pears, or quinces. As you probably all know, fruits may be canned very successfully by the old-fashioned, open kettle method. However, such fruits as black and red raspberries which cook to pieces easily are much more attractive if packed in the can, the boiling syrup poured over them and then sterilized 16 minutes. Or the jars may be first sterilized, the fruit put in them, the boiling syrup poured over them, the jars sealed, immersed in the canner in boiling water, covered closely and left until cold. By either of these methods there will be a large proportion of juice in the cans, but the berries will remain whole and the juice will be delicious in flavor.

If I were not writing to beekeepers or beekeepers' wives, I would not have the face to suggest canning with honey at the present prices, but maybe you will like to try a few jars. The syrup may be made in the proportion of one part honey to one part water, or varied to suit the individual taste. Heat it to boiling, pour at once over the fruit, and proceed as with the sugar syrup.

A Correction.

On page 351 of Our Food Page for June between the words "scientific" and "investigators" there is an interrogation point which is very much out of place, so much so that it cost me the better part of a night's sleep when I discovered it. I have suspected before this that the Gleanings force did not take good care of their punctuation marks, for it is not the first time they have made me say something which was not intended. Please, Mr. Editor, keep those punctuation marks under lock and key when my copy is being set up, and don't let any into my page until I have personally censored them.

I did not mean to question the science of those investigators. They are among our foremost chemists engaged in valuable original research work, and I meant no sarcasm when I called them "scientific investigators," altho I still think it is too bad of them to try to take that nice word "vitamines" away from us. By the way, "food hormones" is a name some chemists like to apply to those interesting little bodies.

The need of conserving wheat, meat, and meat products was never greater than now. Wheat and wheat flour are especially needed, and, if we fail to use the substitutes as we should, it will result in serious want for the people of Europe. Upwards of five million men, women, and children have already died of hunger, half of Europe is on the verge of starvation, and it is estimated that the vitality of almost twenty millions more has been weakened to the extent that makes them practically useless as wage earners.

I believe the food slackers are becoming scarce in every locality. They cannot face those women who have given husband or son to their country's service, those women with brave smiles on their faces, but with that look of heartbreaking anxiety in their eyes.

Now that we have so many delicious fresh fruits and vegetables it is not so hard to cut down on the use of wheat and meat. For months back I have used no wheat flour in anything but yeast bread and have used one-third substitutes in bread. We have also cut down the amount of yeast bread we use, for it is almost impossible to make yeast bread without wheat or rye flour. We use quantities of muffins, cornbreads, and other quick breads which can be made entirely wheatless, and all our desserts are entirely wheatless. There is no object in cutting out all cakes and pastries, for if made wheatless, as they can be, they save wheat by saving bread.

Piecrust may be made of barley flour, a combination of barley flour and rice flour or of cornflour. The pastry is more difficult to handle, but it can be done. A very little baking powder helps to make it flaky. We like the rolled-oats piecrust, a recipe for which I am giving below. It is good in texture and flavor and more nutritious than the ordinary piecrust.

This month I am giving a bread recipe which the head of the Puerden house pronounces the best ever. He has delicately hinted that it would be well to do no further experimenting with bread recipes. To tell the truth the results (unpublished) of some of my experiments in attempting to use more than one-third substitutes in bread have not been successful, and I have come to the conclusion that we would eat less yeast bread, but what we do eat shall be good bread. My reason for not scalding the rolled oats in this new recipe is that it does not keep well in warm weather. I believe the Cream of Maize called for in the recipe is sold in some localities under the name of Cerealine. Be sure to mix your bread much stiffer than when made of all wheat flour. Neither the substitutes nor the flour as milled at present have the absorbing power of the old white flour.

VICTORY BREAD.

1 $\frac{1}{2}$ cakes dry yeast	3 cups rolled oats
3 pints liquid	5 cups Cream of Maize
2 or 3 potatoes riced	$\frac{1}{2}$ teaspoon soda
3 teaspoons salt	flour (about 4 qts.)
1 tablespoon honey	

(Continued on Advertising Pages.)

LAST month I said that locality was a very important factor in honey production, and admitted that, side liners though we are, we had moved part of our bees to the country. Well, during May the contrast between those and the ones left in our yard at home was certainly interesting to watch. Needless to say, the country bees have outstripped their city cousins. So for the most part we are running these home hives for increase, and, in the fall, if they aren't all moved, lock, stock, and barrel, to the country it will be because at the last minute we couldn't bear to give them up out of the home surroundings. Probably it will result in two or three being left here for our pleasure and the rest being moved.

May was pretty warm, day after day going over 90 degrees; and working in the sun, one became every bit as hot and sticky and tired and mussy as Miss Dorothy Quincy Wright warned, in one of her interesting Country Gentlemen articles last winter. But at that it has been a pleasure, out there in the quiet of the country, with brown thrush and mockingbirds and cardinals around, and the shade slipping graciously along under the trees. We're a picky pair, anyway; so sometimes I have gone out on Saturdays, for on that day Mr. Allen can join me at about 1 o'clock, and we eat our lunch like real farmers on the grass under an apple tree. Some day soon those apples will be a part of our lunch. Mulberries already have been.

Dr. Miller speaks, page 349, June Gleanings, about the kindly treatment afforded baby queens by any colony. One day not long ago, I was looking thru a super to which I had raised some brood a little before and where I therefore expected to find queen-cells. There they were, and one cell had the little door already cut open, and the royal antennæ were waving out into the world. I remembered a queenless colony whose cells I knew were just started, and, as it was rather weak, I thought a queen reared by this big, strong colony might be more vigorous, so I carried the comb over to this other hive, cut out around the cell, and laid it in the doorway, with the little hinged lid facing in. The bees passing in and out gave it a look or two, but seemed not particularly interested. After a few minutes out ran the baby queen, right into the hive. The next day she was still there, as were also the cells, but later the cells must have been destroyed, for there was a laying queen two weeks earlier than otherwise would have happened.

That day that I deposited the emerging queen on the doorstep of the other hive and stood

Beekkeeping as a Side Line

Grace Allen

watching the emergence, I turned back with the comb in my hand to the open hive it was taken from, only to find it swarming! Out from the entrance and

out from the open top they came pouring. Given a new hive for a brood-chamber, with the old brood-chamber (all cells cut out) on top of the supers, that colony became a hummer.

A day or two ago I came across a young queen and an old one in the same brood-chamber. Being here at home, where I was making a little increase, I took the old queen and two combs of brood away, leaving the young queen to the tender mercies of the colony in the old hive; and I expect to find her laying soon.

In this connection, how long before a young queen goes on her flight would she be expected to mark her location? Not knowing how old she was, nor how far she had progressed in her career, I hesitated to carry her to the other hive, lest I muddle her geography with disastrous results. Yet I suppose this seldom happens, as I have never noticed this point raised in discussions on introducing virgins. Suppose, tho, a young queen had played about the entrance for a day or two, getting her whereabouts into her somewhat undeveloped head, and then was taken from that hive to another in the same yard, perhaps the day before she would normally take her flight; would she be quite sure to establish the new location before venturing on the wedding trip?

Another queen experience of last month was the finding of one colony with four or five frames of nice worker comb all rough and bumpy with drone brood—evidently a failing queen. It was not a pretty sight. The queen (August, 1916, purchase) was of course promptly executed. I wonder how Fabre, rejecting the doctrine of the parthenogenesis of drones, would have explained this kind of thing!

Stancy Puerden once said that if she wasn't careful, people would be wondering if she would ever stop talking about cornmeal. Well, I, like Dr. Miller, hope she will not. (And what an excellent department it is, by the way.) But long before this, doubtless, some people have wished that I would stop talking about winter-packing in the South. Well, I probably shall skip August! September will be about time to start again. Tho of course, for that matter, the winter-packing subject itself is quite skippable, you know. All I am going to say this month is that I have wondered myself as to the efficacy of the leaves as packing—Mr. Crane suggests, page 350, that they might not be packed down tight enough—I don't know,

yet when the sides of the big box were removed, the leaves stood there stiff and firm and hard and self-reliant. Anyway, as the Editor advocates, we are going to give it another trial next winter. Yet honestly, Mr. Editor, why wouldn't a quadruple case be as effective in a small yard as in a large one? The details you mention—entrances, wind protection, stores, strength of colony, and age of queens—would not enter into a comparison between the packed hives and the unpacked ones at their sides, as these conditions were practically identical thru-out the yard.

Yes, indeed, I'm going to try it again, because my judgment says it ought to be worth while—in spite of the insistence of my experienced and successful beekeeping friends, who affirm that strong colonies with young queens in good hives need be packed "in this locality" only with generous quantities of honey and young bees. There's a story going the rounds here this year of a hive that a horse kicked over in the early winter, and that was never righted, but lay there on end, bottom board and cover both fallen off, thru all our cold, snowy, blizzardy, below-zero weather, and then met the spring strong and chipper and ready for business.

I smiled when I read, under the caption, "Making a Start," "It is best to buy a good colony of bees in a standard hive. . . . It has sometimes been advised to start by buying bees in a box or any old hive, and transfer them to a modern hive 'for the experience.' It is the sort of experience to dampen the ardor of the most enthusiastic, and an experience which the wise and thrifty veteran avoids as he would a pestilence." That interested me particularly, because recently some dear friends of ours, after buying a good colony in a standard hive for \$10.00, had a chance to pick up a supposed bargain at \$6.00. Soon they admitted they would appreciate some help, as the second purchase quite evidently needed to be transferred, and the inside of the brood-chamber looked forbiddingly solid. So we went to the rescue. It was a home-made eight-frame hive. Of the eight combs, three fell to pieces when tugged out—a sticky conglomerate of comb, brood, bees, and honey. The remaining five we put over an excluder to save the brood, but later several of them may well be discarded. The old hive, made of ½-inch lumber, was thrown on the kindling pile. So after all, the \$6.00 bought not much more than the bees themselves.

I am sure our courteous editor won't mind my correction of a mistake in this department last month. As a matter of fact there were two, but I wouldn't have mentioned merely the use of the phrase "bee escape" instead of my own words, "bee space"; altho it did change the meaning. I know mistakes will happen, especially in these days of shift and change in the personnel

of offices. But I can not let the mistake in the verse go by unnoted. I had planned ever since starting the little bee verses to do one on the swarm, for it is such a big, important incident in bee life. And I wanted the very form and fashion of the lines to suggest the interwoven rhythm and swing and gleam and romance of a swarm in mid air. Of course, the result didn't even approach the aim, but like Dauber (do you know Masefield's Dauber?), thru the work of doing it, I knew for a little space the "joy of trying for beauty." So I just hurt all over when I found two lines transposed in the fourth stanza. For one thing, the very grammar thus went wobbly, and left one hunting for the subject of the verbs in the line "Draw close and fold over and under"; and then, anyway, the way it got printed isn't the way the swarm really goes. Look at the splendid June cover page. Not until the bees had drawn close and folded over and under, did the wonder of the completed cluster hang there on the tree. So the fourth stanza should read, as my carbon copy does:

Like sun-motes they hover suspended,
Aquiver, ecstatic and singing;
Then slowly go swaying and swinging,
To a restful old cherry tree near,
Draw close and fold over and under—
Till there on the tree hangs the wonder!
The song and the shimmer are ended
And only the silence I hear.

But we all make mistakes, don't we? And transposing two lines in a verse, even about a swarm of bees, isn't like pulling the wrong switch, or getting orders mixed in battle.

One beeman may work while another is lollin'—
Still bees gather nectar and baskets of pollen.
One beeman is poor, one in riches in rollin'—
Still bees gather nectar and baskets of pollen.

How about it, Mr. Editor? I know what Worcester and Mr. Allen and I say, but there's a heap o' folks agin us. And for that matter, how about this?

One beeman whose yard is quite near a metropolis
Complains because hives are so sticky with propolis.
Be the name of the beeman Smith, Johnson or Hollis.
Bees will make hives sticky, somewhat, with propolis.

We ought to pronounce such common words as propolis and pollen alike, we beekeepers—main liners and side liners all. But we don't. Won't you say something, Mr. Editor?

WAR DESOLATION.

The homes are gone—the little farms
Are plowed with shells—there are no trees,
No grass, no flowers, no ripening grain,
No gently humming bees.

Strong men arose, breathed hard, and marched;
And came not back; by night and day
Were flame and roar—dazed women fled—
The bees all flew away.

The land is torn and brown and bare
And death screams down the ghastly hours;
Where once were garden plots with bees
Humming in the flowers.

When peace shall come at last, and bring
Her gifts to tired lands overseas,
Once more may orchards and green lanes
Be murmurous with bees.



FROM NORTH, EAST, WEST AND SOUTH



In Northern California—The southern portion of the valleys of our district this season obtained their share of normal rainfall, while the northern portion received only half its normal. The rain was not well distributed, as April and May were comparatively dry months. Consequently the fall honey plants are not expected to give a rank growth. It is difficult to forecast the honeydew flow. Caterpillars on the willows are becoming very abundant but as yet there are few ladybugs appearing. Both these pests are known to cause considerable damage to the aphids.

The main honey flow practically everywhere started about three weeks earlier than last season. At this writing, June 5, many beekeepers are operating their extracting crews. The alfalfa crop promises to be heavy. Alfalfa growers are experiencing much difficulty in securing help, and it seems likely that alfalfa will be allowed to bloom even more profusely this summer than was the case last year. The Tulare County orange honey crop amounted to four or five carloads. One carload that has been sold brought the beekeepers nearly 21 cents per pound. At this writing bona fide offers of 23 cents have been turned down by some producers. Last year the average amount of honey stored per colony did not amount to much over 25 pounds, but this season several producers averaged 75 pounds per colony. There was no pollen scarcity, as was the case in 1917, after this season's orange honey flow. Taking the situation as a whole the outlook for a normal or even better than normal crop is excellent. Were it not for disease and scarcity of help, both of which are seriously handicapping beekeepers, it would be safe to assume that there will be a larger crop for 1918 than there has been for the last four years. Inspector Lynch of Stanislaus County states that this year the county has 75 per cent more disease than last. It is American foul brood that is causing practically all the damage.

It is interesting to note that according to the last U. S. Census (1910) there were 6,362,000 farms. Colonies of bees were reported on 9.2 per cent of the farms. By means of comparison with other products it is shown that 6 per cent of the farms grew barley, 4.4 per cent alfalfa, 5.1 per cent tobacco, 4.4 per cent sugar cane, 6 per cent sugar beets, 14.5 per cent grapes, and 9.6 per cent sheep. The very fact that 585,304 of the farms in the U. S. possess bees tells us that the status of beekeeping has risen to a very important position amongst other agricultural industries.

During the past month the advance of our co-operative marketing exchanges has been very marked. Considerably over 50,000 colonies of bees thruout the State are within

the organization and at the present rate of securing signatures we are getting between 2,000 and 3,000 colonies daily. The Promotion Committee fully expects that 75 per cent of the colonies in the State will be in the organization this winter. When it is understood that it has been hardly over two months since the campaign started and that the exchanges have secured over \$25,000 within this short period, it must become evident that this co-operative movement is meeting with the hearty approval of nearly every beekeeper. Northern California has now three local exchanges organized. They cover the territory of the Owens Valley, and the upper and central San Joaquin Valleys. On June 6, the lower Sacramento Valley will be organized. There yet remains unorganized thruout our section the upper Sacramento district and the district comprising the counties of Monterey, Santa Cruz, and Santa Clara. This territory will be worked within the next two months. M. C. Richter.

Modesto, Calif.

* * *

In Southern California—This part of the State experienced about three weeks of as cool weather as was ever known here during the month of May. It cut off fully one week of the orange flow and held back the sages and other wild flowers. Work of extracting has been very much delayed by this cool weather, and many beekeepers were two or three weeks late in getting their orange honey extracted. June 1 it turned warmer and the black sage is still yielding some honey, altho on most ranges it is pretty well past its best honey-yielding period. The wild buckwheat and the white sage promise some honey, but few beekeepers even hope for much of a crop. A freak storm with a heavy thunder shower passed over some parts of southern California, giving as much as two inches of rain in some localities. This will help the late plants to a longer blooming season. Beekeepers in the great sage belt of Los Angeles and Ventura Counties differ in their opinions about the prospects of a crop. However, most of them expect about half a crop or one 60-pound can per colony. The bees were slow to build up and this, together with the ravages of disease, has very materially cut down the yield of honey in almost all sections of the State.

By the time this reaches the readers of Gleanings all of the migratory beekeepers will have moved from the orange districts to their summer ranges. Apiaries that were located within a mile or two of each other to gather orange honey are now, in many instances, a hundred miles apart. This is but the onward course of events, constantly changing in our business as well as every other line of industry. We must get on the band wagon and keep up with the procession



FROM NORTH, EAST, WEST AND SOUTH



or we will soon be back numbers and listed among the down-and-outs.

The San Bernardino County Beekeepers' Club held its monthly meeting Saturday, June 1, with a very large attendance. Word had been given out that honey buyers would be present at this meeting, and beekeepers having honey for sale were requested to bring samples. This honey would be sold at auction to the highest bidder. (A very successful sale was held in this way last year and the producers were again ready to sell by the same method.) Many samples were brought in, representing about 1,400 cases of fine extracted orange honey. Producers of the county had fixed 21 cents a pound as the minimum price they would consider for white orange honey, and they stood pat when the representatives of various firms declined to start the auction at that figure. It was reported that the buyers were ready to offer 20½ cents per pound. But the beemen declined to open the auction at that figure, insisting that the opening price must be 21 cents. After considerable discussion it was decided to call the auction off and not put the honey up for sale in that way. The honey sold last year at their auction for 13.85 cents for the water white and 13½ cents for the white. The year previous the price paid for white honey was 6½ cents per pound.

A second carload of cans and cases was ordered by the club at quite a saving to members when compared with the price individuals would have to pay for small lots.

Some sales of orange honey have been made at 21 cents, but many producers—especially those producing a considerable amount of honey—are not selling, as they feel sure of getting a higher price later on. White honey is the kind most sought, altho buyers are willing to take light amber at from 17 to 18 cents.

The Riverside County Beekeepers' Club will hold its regular monthly meeting Saturday, June 8, at 5:30 p. m. A family picnic supper will be enjoyed at Fairmount Park, Riverside. The club will furnish coffee, cream, and sugar, while those attending are requested to bring their own basket supper. Following the supper a business meeting will be held when State Organizer Massey and J. D. Bixby, a member of the promotion committee, will both speak in favor of the State organization. Honey buyers and those having honey for sale will have an opportunity of getting together for the sale of the season's crop. Members of the San Bernardino County Club have been invited, and beekeepers from Los Angeles County will also be present. An exceptionally fine meeting is expected, as these "picnic meetings" are always very popular and well attended.

My sister, Elizabeth Andrews, expects to leave in a few days for France to do recon-

struction work along apicultural lines. She is one of 15 chosen from Stanford University Alumni for special work and will be under the supervision of the Red Cross.

Corona, Calif.

L. L. Andrews.

In Michigan—Beekeepers in the southern part of the State are not feeling very optimistic regarding this year's honey crop. Dry and cool weather has prevented secretion of nectar in many localities. In the southwestern part of the State there is not a very good stand of white and alsike clovers; and not much of a crop is expected from these sources. Reports from the central and northern parts of the State are very encouraging. In many places fruit bloom and dandelion have yielded several times the usual amount of honey.

The high cost of living and travel has hit the State Inspection Service pretty hard. Instead of having two regular deputy inspectors, as during the past year, it now looks as tho the number would have to be reduced to one, in order to keep within the limits of the appropriation provided. As next January is the time of the next meeting of the State Legislature, this might be a good time to consider whether or not the candidates are friendly to the interests of the beekeepers.

Plans are now under way for the next meeting of the State Beekeepers' Association. This will be held in Battle Creek some time during the latter part of November or the first of December. The exact date will be announced in the August numbers of the various bee journals. The holding of the meeting at Thanksgiving time, as has been done for the last several years, will be abandoned. It is hoped that each of the county associations will send one or more delegates. A new premium list will be arranged. Make plans now for attending and for bringing along an exhibit.

East Lansing, Mich.

B. F. Kindig.

In Iowa—Iowa, especially the central part, has experienced a veritable deluge for over a month, about 20 inches of rainfall being the record at this writing (June 6). The fruit bloom has been seriously injured, especially cherries. The weather has been very unsatisfactory for the flight of bees on account of coolness and incessant showers. A very heavy rain and hail storm struck central Iowa when cherry and apple trees were in full bloom, washing the pollen quite thoroly. If this weather continues, the bee business in Iowa will likely have a backset for another year. The clovers are beginning to bloom profusely, but the bees can gather no nectar thus far because of cool and rainy conditions.

If the Iowa beekeeper does not retail his honey at 25 cents per pound this year, he



FROM NORTH, EAST, WEST AND SOUTH



might just as well quit his meanness of complaining about low prices.

The second annual short course for Iowa beekeepers was held at Ames Experiment Station, May 13 to 18. The sessions were addressed by a large number of Iowa's best beemen, as well as a number from outside the State. Practical, instructive work and demonstrations in the experimental apiary of the State College were thoroly appreciated. These courses are always given free of charge to those attending and will prove a blessing to Iowa beemen by teaching them to do their work in a practical, uniform way.

The 1917 annual report of the State Apiarist and Iowa Beekeepers' Association has not yet been issued by the state printer. As soon as it is ready, a copy will be mailed to each member whose dues are paid for 1917. Anybody else desiring a copy should address the State Document Editor, Des Moines, or Prof. F. Eric Millen, State Apiarist, Ames.

Every Iowa beekeeper ought to belong to the Iowa Beekeepers' Association. There were over 300 paid-up members Dec. 31, 1917. If you have not paid your 1918 dues (50 cents), do so at once, sending it to Hamlin B. Miller, Secretary-Treasurer, Marshalltown, and thus keep in touch with the beekeeping interests of the State.

Marshalltown, Ia. Hamlin B. Miller.

* * *

In Idaho—The month of May was discouraging to honey producers in southern Idaho. Bees came thru the winter in remarkably fine condition, built up rapidly, and have been extraordinarily heavy for weeks. About May first cold weather came upon us, accompanied by high winds, and our bees were confined to hives for days. Nectar, which had been coming in quantity sufficient to stimulate brood-rearing, was cut off, and the majority of our largest producers were compelled to feed, some using all low grade honey on hand and calling upon the Idaho Food Administration for sugar in quantities up to two tons.

During the month we had frost on 12 nights, three of these being heavy and two of the killing variety. All of our fruit districts admit their crops are seriously damaged, some having lost their entire setting of apples. The first cutting of alfalfa has been frozen in a number of districts in this corner of Idaho, but this will not seriously effect honey producers because very little surplus is obtained from it, the bulk of our crop being stored in July and August from the second and third cuttings of alfalfa.

For some days the weather has been much improved, and with favorable conditions from this time forward honey producers will secure the best crop they have had for several years.

Honey buyers from Coast to Coast are

now writing and wiring freely in an effort to contract honey for fall delivery, or to have orders booked subject to approval of prices at time of delivery. None will name price at this time, or make an offer, but all want to tie up stock for delivery later on. No contracts are being made in this section of Idaho.

P. S. Farrell.

Caldwell, Ida.

* * *

In Ontario—Since sending in copy for June Gleanings, a large number of reports have been received from many parts of Ontario, and while conditions vary a great deal, good wintering and almost total losses coming from points not far apart, yet the situation on the whole is little changed from conditions of a month ago. As already stated in past numbers, wintering conditions for the past season, briefly summarized, point to the fact that wherever bees had abundance of good stores they wintered fair to good; while, on the other hand, where stores were scant or of poor quality, the bees wintered very poorly. At our yards around home here, stores were given in abundance for all ordinary winters, but judging by results, the quality of food was poor. On the other hand, our bees up north, where the stores were over half sugar syrup, never were in better condition. In the first instance, losses are nearly 50 per cent counting colonies too weak to be of any use; while in the other case, loss is practically nil and bees in rousing condition, nearly all ready for any clover flow that may come.

Naturally, my ideas previously expressed as to the comparative safety of a goodly proportion of sugar syrup in the winter food supply, on the one hand, and stores of doubtful or inferior honey in the other case, have not by any means been modified; and, for our severe climate, the sugar syrup is beyond all question the safest, taking one season with another. Just one instance gleaned yesterday while I was traveling on the train homewards from visiting an outyard some miles away. Meeting a friend I asked how the bees had wintered in his locality. He stated that many had lost very heavily but mentioned one beekeeper who had no loss at all. And he at once added, "But he fed heavily on sugar syrup last fall."

Generally speaking, a place quite near a large body of water is not a very good location for beekeeping. Some one says at once that anybody can see that fact, as water takes up space within foraging reach of the bees and never produces any nectar. While this is so, yet I have rather in mind a body of water quite large, but not large enough to prevent bees from flying to the other side. A short time ago I had the privilege of calling upon a friend, Mr. J. D. Oliver of Fenelon Falls. Mr. Oliver lives on the north side of Sturgeon Lake a few miles out from Fenelon Falls. The lake near Mr.



FROM NORTH, EAST, WEST AND SOUTH



Oliver's place is a mile or more across. On the north side where Mr. Oliver lives, little if any buckwheat is grown, while on the south side quite an acreage is grown. He told me that during August fishermen often tell him they have picked up a lot of his bees out of the lake and saved them by putting them in the boat; and Mr. Oliver said to me, "I wish they wouldn't mention it at all as it is simply heartbreaking to know that thousands perish in trying to cross." As all who have had experience with buckwheat know, during weather that is at all cool, bees loaded with buckwheat seem to get partly stupified and fall down frequently when on homeward flight. Some years the buckwheat flow depletes Mr. Oliver's colonies to a very serious extent, and, of course, that means less successful wintering not to mention loss of surplus.

From reports to hand so far, moisture conditions throughout the Province vary a great deal at time of writing (June 7). Here at my home in York County the fall of rain has been rather deficient, while up at Lovering in Simcoe County, where I have two apiaries, rainfall has been so abundant that grain on low land has suffered. Yesterday I met Mr. Clark of Cainsville, Ont., and he stated that in the vicinity of Brantford rains had been abundant. Passing thru Mariposa Township, Victoria County, a noted alsike district, at time of our conversation, I noted that alsike along the track was showing quite a lot of bloom but was very short; and Mr. Clark stated that in Brant County, where he lives, alsike was twice the length of that we were looking at. This all goes to show that conditions may be very different in localities not far apart.

Many inquiries continue to come in for honey, some of the large firms already being on the lookout for supplies for later on. Of course, all honey is now off the market and any new crop obtained will go on a bare market, with many eager to buy it. For very many reasons a good crop of honey is to be desired, but unfortunately, in too many cases the very first essential towards getting honey—bees—is absent.

At date of writing, no appointment has yet been made to fill the position vacated by Mr. Pettit, but I understand that a gentleman, well known to the fraternity both in Canada and the U. S., has been approached and is likely to be appointed in the near future.

The pound-package business has received a bad knock-out this year, no question about it. In a former issue I stated that many orders from the South had been cancelled by the shippers. That had better be amended to read, "about all orders have been cancelled." One large firm of dealers had placed orders for thousands of pounds of bees for customers, and, speaking with the man-

ager over the phone a few days ago, he stated that they had not received a single pound. Probably many combs will be melted up in apiaries depleted by winter losses, and in too many cases it is to be feared that good combs will be destroyed by moths, if they are not looked after.

J. L. Byer.

Markham, Ont.

* * *

In Texas—Much is being said now about food conservation and increased production, and this principle is being brought to the attention of the beekeepers as much as possible. However, it is being disregarded by far too many owners in many sections of this State. There is an attitude of indifference on the part of many to increase and conserve as to bees, tho the principle is being applied to all other phases of agriculture. In a recent visit to a section of great possibilities the most notable thing I observed was the neglect of the bees. Many were entirely too busy trying to increase the planted acreage instead of putting their bees in shape to gather some of the tons of nectar that was going to waste. Many cannot understand that nectar is produced as a natural resource and only bees are capable of transforming it into the finished product, honey.

I am working hard to arouse the beekeepers of this State to produce their quota of honey. With the bees that exist in Texas and a normal average production per colony, the honey output should be over two and one-half times what it has been in the past years. For the low average production there may be several reasons which can be summed up in the term, "gum." Those who keep their bees in box hives first indicate an attitude of indifference, something very hard to neutralize. Furthermore, it is such beekeepers who keep bees to "rob" in order that they may secure the family supply of honey. Only a few days ago I was treated to the sight of an "apiary" of 35 hives which netted the owner a scant supply of "chunk" honey—and much effort. I was told of another apiary of 75 box hives in this same vicinity. These conditions are being broken down rapidly in those counties where the apiary inspection service is organized. Further efforts will be made to conserve the natural resource of nectar, if the local extension service is able to follow its desires and obtain a specialist in apiculture. The extension service has realized the need of this work for some time but has not been able to secure the necessary funds.

Mr. Jackson, formerly Assistant Entomologist in connection with Apiary Inspection Service, has resigned and reported for duty with the Laboratory Division of the medical branch at Fort Leavenworth, Kan. The short time that Mr. Jackson was in Texas he made many friends among the



FROM NORTH, EAST, WEST AND SOUTH



beekeepers and all will wish him the success that is due him.

During the past year honey has been brought to the attention of the public as never before; every advantage of honey has been told again and again. People who have been brave enough to venture have found out that the claims were true. This will undoubtedly result in an increased demand for honey in the United States. If the present conditions are maintained, the American people again will be without honey. The foreign governments have representatives who have gone thru the country contracting for the big shipments of honey at a margin on the market price.

It is, indeed, too bad that there are so many beekeepers who would rather hinder co-operative efforts than assist and share the benefits. The Texas Honey Producers' Association is being fought by many who should be giving the same efforts to boosting. The benefits of co-operation are not new, but to some they are not conceivable. Co-operation is bound to succeed—everyone better receive his share of help.

College Station, Tex. F. B. Paddock.

* * *

In Florida—Reports from Florida bee-men are, taken on the whole, encouraging this month. The flow from saw palmetto has been exceptionally good, furnishing in many instances as large a surplus as did the orange. From the Tampa district come reports of 60 pounds per colony and "double the amount secured from orange." Also a report of a small surplus from persimmon, which is unusual in Florida. On the creeks and swamps of the southern part of the State a good crop is being harvested—"two to three extracting supers." In this immediate neighborhood we have not done nearly so well, and, tho we have some honey, very little will be extracted until we see what the prospects are from cabbage palmetto and partridge pea in July. We have been disappointed so often that, this year of all years, we cannot afford to let our bees get to the state where they can not say, "there are millions of honey at our house." It will not hurt us beekeepers to Hooverize and eat substitutes, but our bees will fare better on their regular diet, and we may buy more Liberty bonds later than we would if we squeezed the last drop from our bees now.

As to the quality of the crop of palmetto honey, it is fine, equal in every respect to the orange. If the honey secured in other localities is equal to that made in my own yards, it should class even higher than the orange, for orange honey this year was not up to standard. Some honey I tasted at my swamp yard this week is of such exceptional flavor that it should rank as high even as the orange honey of 1914. This was a blend of

palmetto and basswood, and there is reason to expect that all honey produced on the swamps thruout the State will be of the same high grade.

Many beemen are kicking themselves for selling their orange honey at from 15 to 18 cents per pound. Now they find that the buyers were expecting to pay 20 cents f. o. b. shipping point. The tendency now will be to start the price at 20 cents, and get all they can above that.

From northern Florida and south Georgia reports are conflicting. Some localities speak of good crops from tupelo and black gum, others of partial failure. The gallberry was badly hurt by the late, cold weather.

A few blossoms are now open in the cotton fields and the bees are already paying attention to them, some going into the blooms for pollen, but more working on the outside nectar glands at the base of the bloom. It is uncertain if cotton will prove to be a honey-producer in this part of Florida, for there has never been enough planted to make a showing until this year. Those whose bees are within range of the cotton fields this year are watching it closely.

Apopka, Fla.

Harry Hewitt.

* * *



L. W. Lighty, widely known as an agricultural writer for *The National Stockman and Farmer*. He is also a beekeeper as the picture of him shows.

SWARM CONTROL PLAN THAT DIDN'T CONTROL



"Them bees is gittin' ready to swarm, an' they ain't got nuthin' to swarm on."



—"Sneezel!"



Well, I'll be binged! Ain't they too cute. Makin' use er my whiskers."



"Hellup, Hellup! Marier, hellup!"



"Now if I kin get 'em over ter the hive without—"



"Come and help me, ye big fool!"



"Marier, save me, quick! I'm goin' ter sn—snee—"



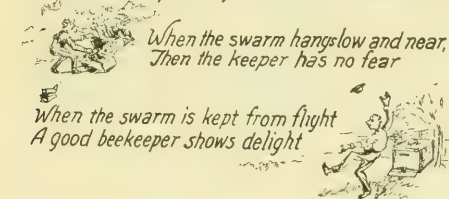
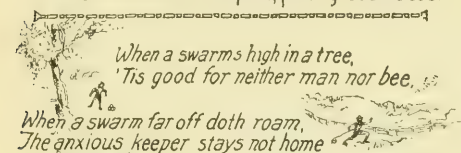
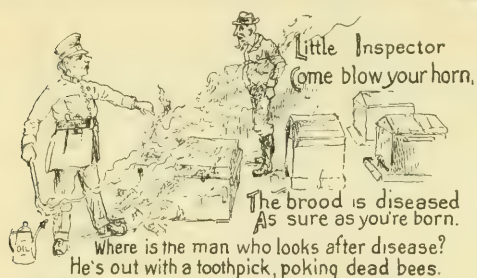
"Reckon there's any bees aroun', Marier?"
 "Not's I knows on. Why?"
 "I want ter sneeze."

(Cartoon by E. W. Kemble, entitled "How Doth the Little Busy Bee," published by Harpers, several years ago.)

HEADS OF GRAIN

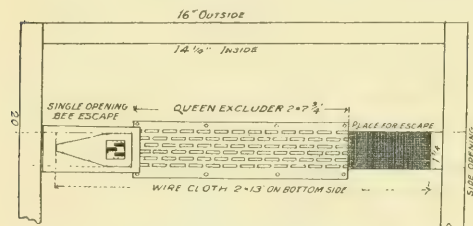
FROM

DIFFERENT FIELDS



A Bee-Escape Direct to Outdoors.

The escape-board is constructed of half-inch boards nailed on a $\frac{1}{2}$ by $\frac{7}{8}$ inch. A space $1\frac{1}{4}$ inches wide is left open the entire length between the edges of two of the boards. On the bottom side this opening is covered with galvanized wire cloth except a small opening at each end where the bees go down thru from the escape. The top of the opening is covered in the center with queen-excluder zinc, and



a $3\frac{1}{4}$ -inch opening is left at each end of this for the bee-escape to fill. The bees, when leaving the escape, can go down into the hive or straight outdoors, passing thru the side opening in the rim. The light thru these side openings helps to draw the bees outdoors. The scent coming up thru the wire and excluder attracts the bees of the super down to the excluder; but as soon as a bee puts her head thru the excluder she can see daylight from the side openings right thru the escapes, and therefore makes her way outdoors thru the escapes. The

escape is a single-end Porter, the end projections being cut back to $\frac{3}{8}$ inch, the round opening covered with excluder and the back end of each escape cut open so you can see thru it. In fact, when both escapes are in the board you can see thru the side openings from side to side.

This escape-board, besides being used for removing honey, may be used when putting on wet extracting-supers. Place an escape in one opening of the excluder and a plug $\frac{1}{2}$ by $1\frac{1}{4}$ by 2 inches in the other opening. When all the combs have been placed on, the plug is drawn out halfway, allowing the bees to go up and down. When the combs are clean, the plug is pushed in and the escape soon clears the super of bees.

Lambert, Ont.

E. T. Bainard.

Two Remarkable Odor Experiences.

A few days ago I was helping a friend treat his bees for European foul brood. There were four hives about six feet apart each way with a small pear tree in the center. We had dequeened the two front hives, and were working on the third, dequeening and shaking on to sheets of foundation. One queen he mashed against a tree. In a little while there was a small swarm clustered on the tree from the ground up. We got some soap and water and washed the tree trunk all over and thought that we then had the queen odor suppressed. But as soon as the tree dried, on the bees went again by the quart. This time we got some phenol sodique and water, one to five, and painted the tree trunk all over. But as soon as it was dry the first 20 bees alighted on a space less than 4 by 4 inches, just where the queen was killed, and not a bee anywhere else on the tree. In an hour the tree was covered with quarts of bees from both hives.

Now, was this caused by the odor of the queen? and is the odor stronger when the queen is mashed?

C. E. Fowler.

Hammon, N. J.

[The odor of a queen has lasting qualities that seem to overcome all other odors, even that of the skunk, and Mr. Fowler's experience is just what might have been expected under the conditions stated. I saw a demonstration of this fact that, I think, beats even Mr. Fowler's experience with the mashed queen. One day my son George had his insect-mounting box at the basswood grove showing it to some visitors. Among his specimens was a queen-bee. We had been making up nuclei that morning and there were a lot of stray, queenless bees in the air. The mounting box was left open a few minutes when bees began to cluster on this dead queen. She had been in the mounting box more than a year, and moth-balls had been in the box all of this time, the odor from which is supposed to overcome all

HEADS OF GRAIN

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other odors. There were also a worker-bee and a drone in the collection of mounted specimens, but the bees paid no attention to anything except the mummy queen.—M. T. Pritchard.]

Medina, O.

Safe and Sane Queen Introduction.

For introducing valuable queens, I have for a number of years used the following plan without loss: About a week prior to introduction I draw about one-half of the brood from a good strong colony and after shaking enough bees to make it reasonably certain that the queen is in the lower hive, I place the brood above the queen-excluder and lower hive. Then before introducing the new queen, I move the upper hive containing brood to a new stand, thus getting rid of the old bees—the ones that do all the mischief. With this plan there is no time wasted in looking for the queen; there are no old bees nor young brood in the hive; and there is a laying queen up to the time of introduction. These I consider ideal conditions.

Oswego, N. Y.

F. H. Cyrenius.

[While the plan above given is by no means new, the principle of getting rid of the old bees is good and one that has been used a good many times by some of our good beekeepers.—Editor.]

Disappearing Disease Is Not Paralysis.

I notice that some of the bee family have been troubled by what they called the "disappearing disease." I see Grace Allen's name among the rest. It seems to me that she and the others have got paralysis and disappearing disease mixed as to terms. She says the disease attacked a hive under a peach tree, and it was the only one affected. There were dead bees around the hive, and others in the hollows of the ground round about. If I were asked for an opinion, I would say unhesitatingly that the trouble was paralysis. I have the same conditions in the apiary I am writing from today. All the complaints say the same—dead bees around the place. Disappearing disease is literally disappearing disease and is a totally different matter from paralysis. You can cure paralysis by changing the queen; but you can cure disappearing disease only by changing the location. In disappearing disease there are no dead bees about the hives nor about the ground. The hives have become weaker, and the bees have disappeared—absolutely disappeared.

I have had an apiary of 150 hives, all three-story and strong, attacked by it, and every succeeding visit showed the hives weaker and weaker all the time until they dwindled down to a handful of bees, and the queen with a patch of brood two inches



Adam A. Clarke of Le Mars, Ia., an experienced beekeeper, entertaining a group of professors and students (Western Union College). His guests at the home apiary were shown the whole process of bee and queen rearing by Mr. Clarke, as well as the actual processes of caring for honey from the comb to the bottled product. It was a day that gave good beekeeping a boost in Iowa.

HEADS OF GRAIN

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across. The cause is, undoubtedly, local. Something is lacking in the feed, or some particular food is lacking altogether, or, perhaps not enough of any food. I have known hives which had got to the stage described to pick up wonderfully upon being moved to a new location and to become roaring strong in a very little while.

The reason it has been called "disappearing disease" is because the bees do literally disappear. If bees die in the hive from any cause, the other bees can be seen carrying them out and flying away with them, and some will be found around the hives on the ground; but with this disease I never saw any dead bees at all. Presumably they die while they are away in the fields foraging. It is a peculiar disease and it is a good thing we do not have a great deal of it. All the

same, apiaries have to be watched, as it may come on at any time. Major Shallard.

Glenbrook, N. S. W., Australia.

An Appeal for the National Association.

The National Beekeepers' Association has in the past done much for the beekeeping fraternity. In the opinion of some it has made mistakes. Because it stands for education and extension work in beekeeping some whose motives are selfish will not support it. All these retard the growth of the National little compared with the majority of the rank and file of beekeepers who are simply indifferent to what might be accomplished by a strong national organization.

There has been much written about the



A recent demonstration given by State Inspector Green of Pennsylvania. Don't overlook the veils on display here.

HEADS OF GRAIN FROM DIFFERENT FIELDS

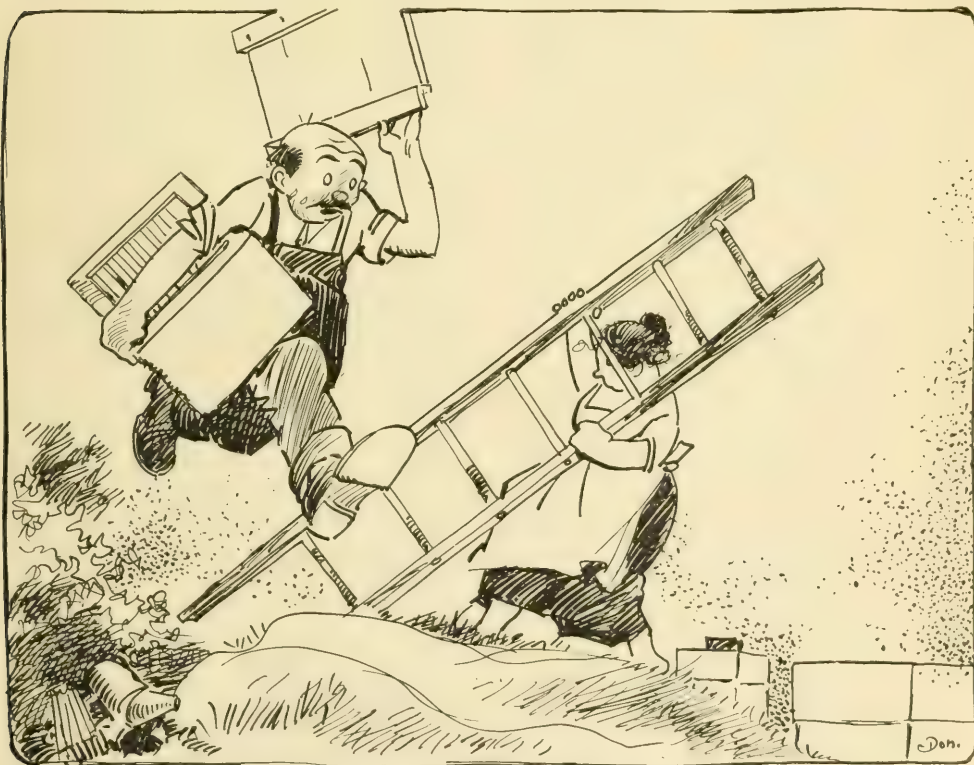
future of the National and the possibilities of its future. Wesley Foster of Boulder, Colo., who was the Secretary-Treasurer of the National for 1915, in an able article published in the December Review of that year, said, "You will not receive more benefits unless more join, and no more will join unless they get more benefits, so there you are." This sums up everything and also shows the solution of the problem—and that is, get members and more members. But how to get them, "Aye, there's the rub." The National has no publicity department, and it is only through the courtesy of the bee journals that it is possible to reach part of the beekeepers.

To each of you that reads this far I say: Why shoulder the expense and responsibility of the National work on a comparatively few, when your support would make an organization that would be able to do what not even the most optimistic have thought possible? Forget the past, think of the future, if you wish, but remember nothing is certain except the present, and the present need of the National is members. Officers of local and state organizations, you could

help greatly. Some state secretaries are sending in lists of new members each week. Why not you? A little talk, a little publicity, is all that's needed.

These are just a few hard facts simply stated, and I hope you will not forget them. Now just a few more: The annual dues of the National Beekeepers' Association are \$1.50 per year. To become a member it is only necessary to send this amount to the Secretary-Treasurer or pay it to your local or state secretary who will send it on. You will get a receipt by return mail. You will not get a year's subscription to the Domestic Beekeeper, successor to the Beekeepers' Review, as formerly included. The National is not now financially interested in any bee journal, but National members can secure thru the Secretary-Treasurer any or all the bee journals at 75 cents each per year. This offer is good for the rest of this year only. If you wish the Market News Service on honey issued by the Bureau of Markets, direct from Washington, mention it when you send in your dues.

Floyd Markham,
Secretary-Treasurer N. B. A.
Ypsilanti, Mich.



THE BACKLOT BUZZER.

BY J. H. DONAHEY.

Serves me right, got stung on the crazy bone, and Ma said it couldn't a happened if I'd had my veil on.

QUESTION.—Intending to do a little trading in buying up honey and retailing, mostly thru the mails in a small way, I should be very much obliged if you would give some information in

Gleanings as to the definition of the term "hoarding" as to law. Even if one puts a fair and conservative price on his goods, he can not expect to sell at once, but will have to keep part on hand, maybe for a few months. Formerly we sold thru the mails, and were sold out about March. I believe that a man who distributes honey thru the mails is more of a benefactor to the people than anything else, because there are many places where honey is not produced, and consequently is high. But even in carrying on a very small business I wish to be found inside the limits of the law.

Wisconsin.

G. A. Lunde.

Answer.—We ourselves are not familiar with the term "hoarding," as to law. In any case, whatever it is, it would not prevent you from retailing honey by mail—that is, retailing honey by parcel post in tin packages. We say "tin" because it would never do to send out honey by mail in glass. The packages should not weigh over two or three pounds, and should be self-sealing so there would be no danger of honey leaking. E. D. Townsend of North Star, Mich., and other beekeepers, have sent honey in a small way by mail. It is usually not practicable to go beyond the first zone. It is hardly wise to rely upon the tin package alone. You would have to put it up in perhaps two or three to a box—something that would be strong and would prevent the package from being broken. A tin package alone might get jammed or punched in such a way as to cause a leak.

Question.—Will you please explain how to introduce by the honey method.

John C. Laing.

Canada.

Answer.—The queen may be caught by the wings or by the shoulders and quickly immersed in the honey, and then poured with the honey down between the frames. The introduction should be made at night or else the entrance made small. When introducing in this way, the honey should not be so cold as to chill the queen; also there should be plenty of honey used, at least half a cupful, and the thicker the honey is, the better. It would probably be a good plan to tip the hive back a little bit, so there will be no danger of the honey running out at the entrance and thus starting robbing.

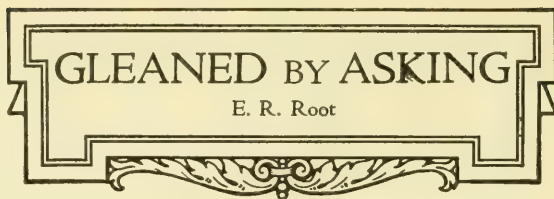
Question.—Do bees see in the dark, or how do they find their way about in the hive?

New York.

G. H. Parker.

Answer.—Bees probably find their way about their hive in the dark by means of their sense of touch, which is located in their antennæ, and also by the sense of smell, the location of which is not definitely known.

Questions.—(1) In the May issue of Gleanings, page 275, is a paragraph headed "Increase—Prevented or Made." I do not understand the last half of that paragraph. What is the object in tearing



down capped queen-cells in the upper story after the excluder has been placed between? Why not leave a queen-cell to hatch, that queen to be the queen of the new colony? (2) Why

leave the hive for eight days before moving to the new stand? (3) Do bees use queen-cells a second time or do they make new cells each time they wish to rear a new queen?

Geo. S. Hall.

Wisconsin.

Answers.—(1) If a capped cell were left while there were still eggs and young larvæ present, the bees would straightway begin more queen-cells, and would shortly swarm out with a young virgin providing there was an upper entrance, or that the queen was able to pass thru the escape. If the virgin were shut up in the upper chamber, and not allowed to mate, of course she would be worthless. Still, if one desires to raise a queen in the upper story, it may be done by tearing down all capped cells, placing a second queen-excluder under the upper hive of brood, making an upper entrance, and, at the end of a week, leaving one capped cell, so that, when the queen hatches she may be mated from the upper hive. (2) The work of the colony should be interrupted as little as possible. If the upper story of brood is left eight days before removing, the original colony will be much stronger, as the number of bees will be increased each day; also there will be less danger of chilling the brood; for if not moved for eight days, by that time all the brood will be sealed, and therefore more easily kept warm. (3) Bees do not use old queen-cells a second time, but build anew every time they wish to raise a new queen. Generally, after the queen hatches, the old useless queen-cells are soon torn down.

Question.—Early in the spring my colony swarmed out and settled in a tree. I replaced the old hive with a new one and hived the bees. The next morning they again swarmed, and this time left for parts unknown. There seemed to be nothing wrong with their hive. What was the trouble?

Oklahoma.

Chas. W. Schlosser.

Answer.—You neglected to tell how the new hive was fitted up. If, inside the hive, there had been some old comb and a frame containing eggs and young larvæ, the colony would probably have stayed all right. Without doubt they had a queen with wings, and after entering the hive and finding it not satisfactory to them, they decided to swarm out and go to a different location. A little young larvæ will often make the colony contented with its new hive.

Question.—My colony has a young queen, and the hive is heavy with honey. I have put on a super, but the bees will not go into it. Instead they are filling their brood-combs with honey. The queen does not seem to be laying much, and there is very little brood, altho the bees are bringing in quantities of pollen. Will you please explain my trouble?

Washington.

Warren A. Worden.

Answer.—We fear that your brood-chamber is honey-bound, that is, that there is not enough room left for the queen to lay.

In order to make room for the brood below, it would be a good plan to put part of the brood, and probably most of it, above, leaving at least a few empty combs below with the queen, and using the queen-excluder between the two stories. The heat will then be just where it is needed, in the upper story where most of the brood is, and the queen will have an abundance of room for laying. Since she is a young queen we believe the colony will then build up very rapidly.

Question.—What becomes of the old colony out of which the new swarm comes? Do they hatch a new queen, or do you have to furnish them with one? or do they set up a democracy and go right on with business?

Thos. A. Banta.

New York.

Answer.—When the bees swarm, they leave queen-cells in various stages of construction in the old hive. The queen goes with the new swarm so that for a few days the old colony is queenless. They do not seem to so regard it however, for with capped cells in the hive, they appear to be perfectly contented, seeming to understand that in a few days a new queen will be present. If one desires to improve the strain, all these cells may be torn out and another queen introduced or a capped cell (in a protector) given them. Otherwise all but one queen-cell should be destroyed in order to prevent after swarms. In regard to the form of government, we are rather inclined to call it a democracy after the queen hatches as well as before. For the queen is a queen merely in name. She has no actual part in governing the colony. Of course the bees vary their actions according to her presence or absence, but other factors besides the presence or condition of the queen call forth just as decided responses from the bees. Each bee seems to govern itself for the good of the colony.

Question.—I am going to install a sorghum mill on my farm where I now have 15 colonies of bees which I intend to increase by about one-third by August. The thought has come to me that the juices of the sweet sorghum might affect my bees, as the plant will be removed only about 100 yards from the original colony complete them? M. E. Ballard.

Texas.

Answer.—Regarding the sorghum mill, it will probably be necessary for you to screen the building, using wire cloth or mosquito netting for the doors and windows of the structure. We have every reason to believe that if the mill should be running during a scarcity of honey, or of natural nectar from the fields, the bees would rob the juices of the sweet sorghum as fast as they run out of the mill, and, moreover, it would cause considerable robbing.

Question.—The A B C and X Y Z of Bee Culture, page 586, says, after getting queen-cells started in queenless and broodless colonies the cells should be given to cell-completing colonies. Why not let the original colony complete them? M. E. Ballard.

New York.

Answer.—The best queens are raised in the largest queen-cells, those fed with an abundance of royal jelly. Such cells may be started by queenless and broodless colonies, for at the start there are plenty of nurse

bees with a quantity of prepared food but no young larvæ to feed—the very condition most favorable for cell-building. However, this is not the best colony for completing the cells for since all the brood has been removed, the number of nurse bees and the amount of royal jelly constantly decrease. If it is desired to use this same colony for completing the cells, the above objection may be overcome to some extent by inserting frames of hatching brood from other colonies.

ANSWERS BY C. C. MILLER.

Question.—How do you think it would work if I divided a colony when they had queen-cells started, putting the queen and most of the brood, say five or six frames, in a new hive on the old stand and moving the old hive off a ways, so the old bees would return? Would this be as good a plan as any to get more honey from the old hive that season, and would it be best to give the "old bees" in the new hive full sheets in the empty space made? I am assuming that they have been discouraged from swarming, of course.

Answer.—If I understand correctly, that last sentence means that you assume that the division you have made will discourage the bees from swarming. That's just the trouble; I'm afraid it won't, and if it doesn't, then the whole thing is knocked endways. Of course the changing of hives cuts no figure and you would have the same result if you should leave the old hive on the stand with the queen and five or six frames of brood, merely taking away four or five frames of brood and putting them in a new hive on a new stand. That much depletion would have no effect; the bees would swarm exactly the same, unless you should destroy all the queen-cells in the hive that has the queen. In a few cases that would prevent swarming, but in most cases would only delay it till a new set of queen-cells should be started. To make it effective you should take all the brood but one from the old stand, and that will probably bring you as much honey as any way you can do, especially if you shake off part of the bees when you take away the combs, leaving with the brood on the new stand only enough bees to keep the brood from chilling. And in following this course you have done nothing more or less than what is called making a shaken swarm. Vacancies in a hive should have frames with full sheets of foundation, unless you want an unprofitable amount of drone-comb.

Question.—In Stray Straws you say the Dadants use shallow frames without excluders. Can you tell how this is or probably could be done? To know this would be worth something to me next season. I had two queens parade thru the second floor (sections) into the attic (shallow frames).

Delaware.

C. A. Colell.

The Dadants use large frames spaced 1½ inches apart. The large amount of room no doubt helps to keep the queen down. But even with eight-frame hives and 1½-inch spacing, my queens do not go up into sections enough to make it worth while to use excluders. I wonder if you fill your sections with foundation. If they are less than full, and drone comb is limited in the brood-chamber, the queen is likely to go up.

THE Chicago Northwestern Beekeepers' Association will send out price recommendations again this season the same as last year. These price letters are free to all members of the Association and to any beekeeper in the States of Michigan, Indiana, Illinois, and Wisconsin, who has 10 or more colonies of bees. The Secretary would like to have the name and address of every beekeeper in the above States to put on the mailing list. The Association is depending on membership fees to cover the expense of getting out these letters and would like to enroll as members at least 500 of the leading beekeepers in the above and surrounding States. The beekeepers that received these price recommendations last year profited many thousands of dollars by following the advice given. The first letter will be sent out about July 20. Other letters will follow every eight weeks or so. The idea is not to boost prices but to try and establish a more uniform price for honey. The dues to the above Association are \$1.50 per year, which also includes membership to the Illinois State Association and a cloth-bound copy of their annual report, which report also contains the proceedings of the Chicago Northwestern annual meetings.

(Signed) John C. Bull, Sec.-Treas., 1013 Calumet Ave., Valparaiso, Ind.

* * *

The Pennsylvania State Beekeepers' Association will hold a field meet at Dr. E. E. Sterner's apiary at Wrightsville, Pa., on July 6, beginning at 1 o'clock. Prominent beekeepers will deliver addresses that will be well worth hearing.

* * *

The annual field meeting of the Idaho-Oregon Honey Producers' Association will be held on the premises of Gottfried Lohrli, Parma, Ida., Wednesday, July 10. All honey producers of south-western Idaho are cordially invited to attend.

* * *

At the meeting of the beekeepers of Lenawee County, Mich., called together by County Agent C. L. Coffeen, held at the apiary of Kenneth R. Fisher in Adrian on May 28, the Lenawee County Beekeepers' Association was organized with 22 members. The following officers were elected: President, Kenneth R. Fisher of Adrian; vice president, A. S. Tedman of Weston; secretary-treasurer, L. C. Retan of Jasper.

* * *

The Northwest Missouri Beekeepers' Association was exceedingly fortunate during the month of May in having Dr. E. F. Phillips of Washington and Dr. L. Haseman, Entomologist, University of Missouri, pay



the Association a visit at St. Joseph on May 6. A very profitable and interesting field meet was held in the afternoon at the apiary of J. W. Romberger, who

is known among the beekeepers as one especially good in queen-rearing. The Association intends holding a picnic on July 4 at Hyde Park in St. Joseph.

* * *

Wm. Lossing, one of the best known beekeepers in the Southwest, died at his home at Phoenix, Ariz., on May 7.

* * *

The New York State Association of Beekeepers' Societies will have a meeting and basket picnic on Aug. 2, at Hayt's Corners, the summer home and apiary of C. B. Howard, president of the Association. A large attendance is hoped for, as there will be an excellent program.

* * *

R. C. Aikin, formerly of Loveland, Colo., later of Texas, died on March 21 at Houston. Twenty years ago Mr. Aikin was a voluminous writer for the bee journals and his inventive genius was much directed to devices for beekeeping. Among other things he built a mammoth wax-melting solar extractor. Under this solar were a metal pan and a brick arch, so that he used both sun heat and artificial heat, claiming that there was an advantage in combining the two sources of heat in melting up beeswax.

* * *

GOOD NEWS—BEES MAY NOW BE SENT THRU THE MAILS.

As Gleanings goes to press, news comes that Postmaster General Burleson has ruled that bees in quantities may be sent thru the United States mails. This very important postal decision, for which leading beekeepers thruout the country have long worked, was officially announced in the Postal Bulletin of date of June 18 as follows:

Office of the Postmaster General,
Order No. 1577. Washington, June 18, 1918.

Amend paragraph 1, Section 476, Postal Laws and Regulations of 1913, by adding thereto the following as sub-paragraph a:

a Honey bees in quantities may be sent in the mails, without insurance or C. O. D. privileges, under the same conditions as are prescribed for queen bees and their attendant bees when delivery can be made to the addressees within a period of five days. If the cages are wooden the material of which they are constructed shall not be less than three-eighths of an inch thick and the saw cuts therein or space between slats shall not be over one-eighth of an inch wide; if wire screen is used for the sides of the cages there shall be two thicknesses of screen separated by slats at least three-eighths of an inch in thickness. The container shall be provided with a suitable handle and no water or liquid food shall be placed therein. Such parcels shall be transported outside of mail bags.

A. S. BURLESON, Postmaster General.

"I HAVE got off 1,600 lbs. box honey, which I have sold for 25 cents per pound. Extracted sold for 14 cents. I have also worked another small

apiary for half of the honey (box honey) from which I have taken 1,900 lbs. I have also worked a 150-acre farm with the help of one man, and, to tell the truth, I am nearly worked out."—G. M. Doolittle, Boro-dino, N. Y., April 1873. [His first contribution to *Gleanings in Bee Culture*.—Editor.]

"Honey may rise too high, but not till it costs more than butter."—L. Deimer, Butte County, Calif.

"Honey prospects are good in this part of the State at present."—H. H. Sarver, Jr., Dallas, Tex., June 8.

"My idea in regard to packing is to pack the cluster instead of the hive."—W. W. McNeal, Clermont County, O.

"Bees did well last year. I only had 10 hives last spring and they paid me \$100 besides the increase, which was 35 swarms."—John W. Reed, Marion County, Ark.

"Conditions in Kansas for a honey crop this year are extra fine. Have had lots of rain and vegetation is very rank."—R. L. Ashcraft, Sedgewick County, Kans., June 3.

"Clover just beginning to bloom, and bees are strong in two-story hives, with one and two supers of drawn combs. Looks like a big crop."—W. L. Lovejoy, Oakland County, Mich.

"Please send copy of June *Gleanings in Bee Culture* to F. N. Swilley, Trenton, Fla., and mark honey markets on page 324. He is selling 'mixed' honey here for 8 cents."—Geo. E. Pickett, Alachua County, Fla.

"I have been trying to get everybody to run for extracted honey. I have offered them the use of my extractor, and have got some of them started. A good honey crop here."—Fred F. Noble, Seattle, Wash.

"No matter how busy I may be on the sea, I am always thinking of the bees, and am anxious for us to get the Kaiser so that I can get back to the bees. I don't think it will take us long."—Albert S. Blanks, "With the Colors."

"About 70 per cent winter loss in this locality; but prospects this season are the best for a large honey crop since 1913. The trouble now is not half enough bees to gather the surplus honey. Very large clover yield; also linden bloom."—Jas. I. Lutes, Marshall County, W. Va., June 13.

"I am the only one near here who has pure Italian bees, and find very few in other than box hives or gums as they call

BEES, MEN AND THINGS

(You may find it here)

them. I have been on this coast 12 years and have kept bees more or less during this time, but have never seen or heard of any kind of foul

brood or disease at any time. It is a regret to me that so little is known of advanced bee culture here."—Mrs. Annie E. Gould, Harrison County, Miss.

"My bees are in fine shape and wintered well. Clover looks fine and prospects are good for a honey crop."—Jas. W. Bain, Marion County, O.

"Winter and spring loss has been a total of 19 per cent here. Just a little more than the average winter dead. Nearly all my colonies have brood in two stories. Prospects for a good honey flow."—Roscoe F. Wixson, Yates County, N. Y., June 5.

"I have kept bees for three years, but never packed them until last fall when I packed 19 out of 22. I lost two of the three I did not pack; while those I packed are stronger than they have ever been early in the spring. Needless to say I will always pack my bees hereafter."—B. W. Dolson, Marion County, Ills.

"There is more net profit in beekeeping, in proportion to the investment, than in any other rural business, and on the average 30 colonies of bees can be kept where one now exists. The high price of honey is sure to continue until the sugar conditions become normal."—Geo. H. Rea, in a statement to the farmers of Pennsylvania.

"European foul brood is very bad here, and some American is found also. One of the Indiana State bee inspectors inspected about a dozen apiaries hereabouts and found most of them affected more or less. He ordered all box hives destroyed, which have been the chief trouble in this vicinity."—M. E. Bond, Pulaski County, Ind.

"We are having excellent bee weather here and the stocks are weeks ahead of what they were this time last year. Bees have risen enormously in price. Stocks (colonies) are selling for five and six pounds in wooden hives, and I know of an old skep with a small quantity of bees sold for 55/ (\$13.75)."—John Anderson, Lecturer in Beekeeping, North of Scotland College of Agriculture, Aberdeen, Scotland, May 15.

"A month ago I got three hives of bees of a neighbor six miles away, and now have lost them all by those big red ants. I have killed them and destroyed their nests. The last ants seem to have come from a long distance. They seem to get into the hive one at a time until they get a bunch together in a corner, and then start a fight and kill the

bees in one night."—H. M. Danforth, Brevard County, Fla.

"There is an abundance of white clover in bloom now and bees are crowding the supers. This country is free from foul brood so far as I know. I have never seen a case yet."—Eugene Busler, Washington County, Ark., June 5.

"The bee business is on the bum in this neck of the woods. If we have many more years like the last two, we can ship you fellows a good many carloads of empty hives to lower the prices of the new ones. With only about 10 inches of rain in nearly two years and the coldest winter in 20 years, things are beginning to look a little blue here. Hope you fellows up there are having good luck."—W. C. Edwards, Uvalde County, Texas.

"When I came here from Williamsburg, Pa., the first of last May, I found beekeepers here selling extracted honey from door to door at 10 cents a pound. I told them that I would not sell a pound for less than 20 cents, at which price I marketed at my yard about 500 pounds, and then raised the price to 25 cents in pint, quart and half-gallon fruit jars, which has been very satisfactory to the people."—W. D. Keyes, Huntington County, Ind.

"Sugar is not plentiful these days, nor is it expected to be. Yet people are urged to preserve their fruits, using some of the several substitutes for sugar or part sugar. One of the most important of these is honey. Jellies, marmalade, pickles, (honey vinegar) and all manner of preserves may be made in part or entirely with honey. The use of sugar will probably be restricted in the making of fruit pickles; honey may be substituted in these."—Burton N. Gates, Amherst, Mass.

"I saw queens introduced by the honey method 40 years ago. I introduced virgins this way for a few days and had good success, but E. R. Root rather objected to it as he thought it would injure the young queens. I dipped the queens in thick honey and dropped them among the bees, but did not pour honey over the frames. This would probably make the introducing more certain, but beginners would be very likely to get robbing started, especially if some of the honey should run out at the entrance of the hive."—M. T. Pritchard, Medina.

"The reason we wanted to sell our honey before packing was that we have always had to sell on the Texas market, and the Texas market demands bulk or chunk comb honey with which we are thoroly disgusted, because when it is once packed it must move at once or it will granulate. Our Texas writers have boosted chunk-honey production and created a local demand for same. Yet it is very unsatisfactory to the producer, and also to the consumer. For our part we long ago saw the mistake and this

year we are trying to get out of the rut. We are looking for a big crop of Guajilla next year. It has not bloomed for two years; in fact we have not had a good general Guajilla bloom since 1914, owing to excessive drought. It is making a fine growth now, and with good rains this fall, we feel sure of it next spring."—O. E. Milam, Frio County, Tex.

"The literature on beekeeping has not been of a type which would induce people to take up the work as a commercial industry. The trouble is not that there are too few beekeepers, for the United States boasts about 800,000, but is rather that relatively few have looked on beekeeping as a possible means of livelihood. A better presentation of the subject might serve to overcome this attitude. No effort need be made to induce more people to keep bees; rather an effort might be made to induce half or more of the present bee owners to sell their bees to good beekeepers in order that the bees might be enabled to produce the crop with the proper care."—Dr. E. F. Phillips in *The Scientific Monthly* for May, 1918.

"It is sometimes said that beekeeping is the least understood of any industry of food production, and often things occur to make one think that such is the case. Many city people will inquire as early as April whether any new honey is for sale yet, and often even some country folks ask just as absurd questions in connection with the keeping of bees. As is well known, about all the old crop of honey has been cleared out long ago, and, of course, dealers are anxious to get some of the new crop as soon as possible. Only a few days ago a prominent firm wrote me asking for honey, and I suspect that they thought this season's crop was on the market already. This firm would not think of writing for maple syrup in the month of December, but they seem to think April to be a month of honey production."—J. L. Byer, Markham, Ont.

"Our enemies, trampling under foot all international agreements and every sentiment of humanity, have used in this war the most barbarous inventions. Just now they bombard Paris with a monstrous cannon. What a disgrace for a people calling themselves Christians! and what a violation of the precepts of the Gospel! Then they can, on top of that, boast of their 'Kultur.' There are no abominable crimes which they have not committed. They have even surpassed the Turks. We firmly believe that, with the help of God, we shall break their gigantic offensive. You may well believe that France appreciates thoroly the valor and noble part your Nation is playing in this world-wide struggle for justice and liberty. France and the United States are united in the same ideal and in the same bond of love."—P. Prieur, Poitiers, France, Editor of the *Revue Eclectique d'Apiculture*, in a letter to *Gleanings*, March 27, 1918.

SINCE such a great number of beekeepers will be beginners this year in extracting, we shall endeavor this month to give a detailed description of the entire subject, and show how the work may be done in a practical way and at small cost.

When To Extract.

Honey should never be extracted until it is thick and well ripened. As soon as the bees consider it just right they begin capping it over. During hot weather, therefore, combs at least three-fourths capped

TALKS TO BEGINNERS

By the Editor

until after the honey flow, he will find that this results in less labor and a much thicker and finer-flavored honey. The employment of this plan may

result in a somewhat smaller crop the first year because of the necessity of the bees drawing out so much foundation; but it should be remembered that these same combs may be used year after year, probably for the remainder of one's lifetime. Therefore it would be poor economy to attempt a small saving the first year that would result in a loss during each succeeding year; and unless one lives in a locality where one source begins before another ceases, and there is consequent danger of mixing the two flows, we really see no excuse for extracting before the end of the honey flow.

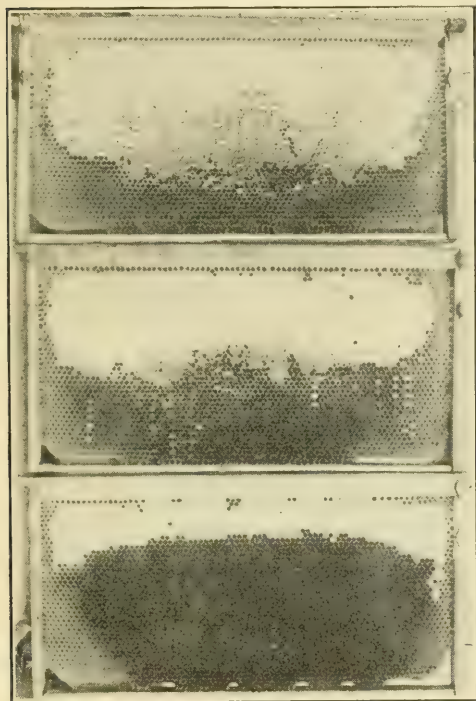
Necessary Extracting Equipment.

For the beekeeper with less than 25 colonies, a simple, practical outfit may be provided at very small cost. A small Novice non-reversible extractor should be securely attached to a solid box firmly bolted to the floor, the box being of the right height for drawing off the honey. The best location for the extractor would be near the wall, where there would be less vibration when in operation, for continued vibration is apt to pull the can or box loose, especially if care is not taken to place combs of equal weight in the two sides of the extractor.

Near this extractor should be the uncapping-can. This may be made of a barrel with both ends knocked out and a coarse screen nailed over the bottom. Across the top, about one-third of the distance from one side, a two-inch strip of lumber should be nailed, at the middle of which a sharp-pointed nail projects upward about an inch to hold the frame while uncapping. The barrel itself may be supported in a tub into which the honey from the cappings falls.

Not far from the extractor should also be a straining can in which is suspended a large cheese-cloth bag attached to a barrel-hoop supported by the top of the can. Too much honey should not be drawn from this can. **There should always be enough honey left to cover the strainer**, for, if the honey gets low, the cappings and impurities that would otherwise float on the surface of the liquid will collect on the strainer and soon clog it.

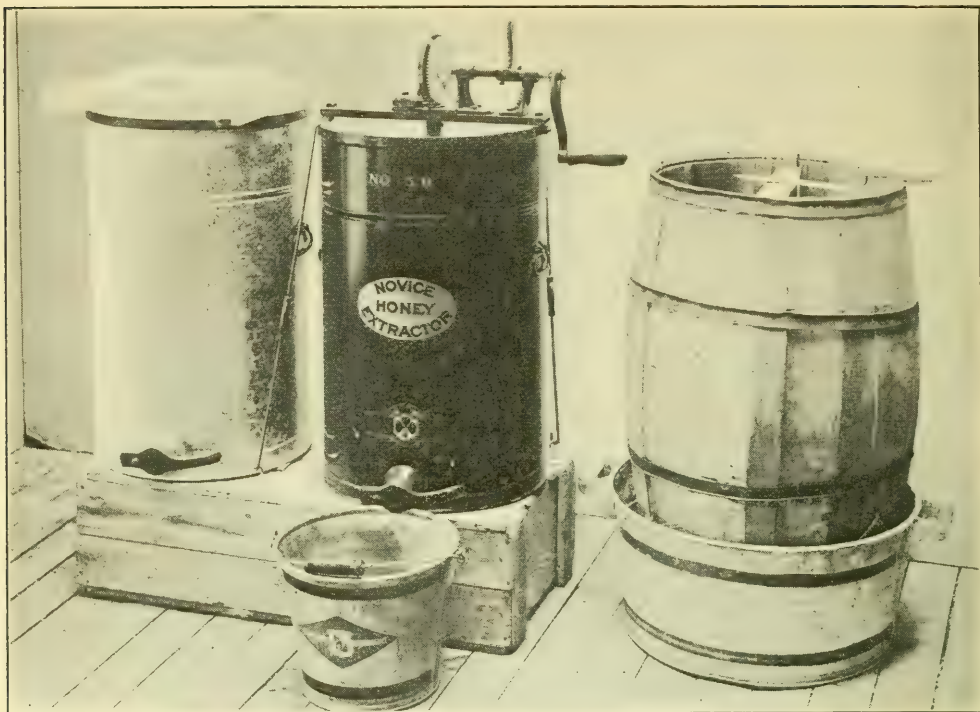
If one cares to take the extra trouble, a cheap yet handier capping-receptacle could be made from a plain box. This box may be of any desired length and about 19 inches wide so that the uncapped combs can be suspended cornerwise in one end of the box until they are extracted. Near one end is a cross piece with an upward projecting nail point for holding the frame



Combs one-fourth, one-half and three-fourths capped—the uppermost one is fit for extracting.

would probably be sealed in a few hours if left on the hive, and may, therefore, be safely extracted. But if honey is extracted before the bees have ripened it, it will be thin and of unpleasant flavor, and, after being kept for a time, fermentation will doubtless result.

Some beekeepers have so few supers that extracting during the honey flow seems necessary in order to give the bees enough room for storing the remainder of the crop. If one is willing, however, to go to the extra expense of keeping supplied with sufficient supers so that no extracting need be done



Instead of the straining tank, a barrel may be used as described on the preceding page.

while uncapping. The bottom of the box is covered with heavy screen, and supported from the shallow galvanized-iron tray by

half-inch cleats nailed on lengthwise of the box. The box and tray are placed on a box at the requisite height for easy uncapping, the outlet end of the tray being somewhat lower than the opposite end, and just above the receptacle into which the honey from the cappings is to drain.

Removing the Honey From the Hives.

By far the best way of removing the bees from the supers is to place under the super, during the middle of the day, a bee-escape board, placing it with the rim up. In the hole of the escape board the bee-escape should be so placed that the bees may pass down into the brood-chamber, but cannot return. By the next morning the super will be freed of bees and may be removed without the danger of a single sting. If no crack or crevice large enough for the admission of a bee is left at the corners of the super or between the super and the cover or bee-escape board, there will be absolutely no chance for robbing to get started. In rare instances an escape may become clogged with the body of a dead bee or the queen may have been accidentally left above. In either of these cases bees will still remain in the super. To remove these, give a puff or two of smoke at the entrance and then gently loosen the cover and blow a number of good blasts of smoke down thru the super, driving most of the bees below. Next remove the combs one at a time, holding each by the top bar and giving a sudden



Putting in the bee-escape board.

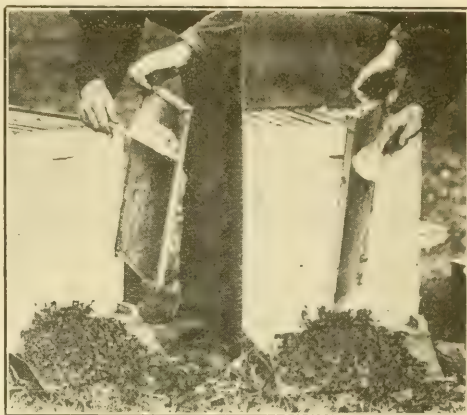
vigorous shake at the front of the hive. But few bees will remain. These may be brushed off with a bee brush or feather as shown in the illustration and placed in an empty hive and covered. Some beekeepers use no bee-escapes but remove all the surplus by smoking, shaking, and brushing. Still we do not recommend this method except in case of emergency, because of danger of starting robbing. For after the honey flow is over, the bees are eagerly searching for more sweets and even the smallest amount of honey left exposed may soon get the apiary into a regular turmoil. Therefore all honey handled outdoors should be kept covered as much as possible and the windows to the honey-house should be screened.

If extracted while still warm, more honey can be removed from the combs. For this reason some beekeepers prefer screened escape boards, since with these the honey keeps much warmer.

Actual Process of Extracting.

The supers of combs to be extracted should be placed within easy reach of the uncapping-receptacle. Then one at a time the combs are removed and held with the top bar away from the manipulator, and the end bar resting on the nail-point of the cross bar. Holding the upper end of the frame with the left hand and tilting the upper end

motion. If the comb contains any depressions, the heel of the knife should be used. Then reverse the comb, still keeping the top bar away from you, and slice a thin layer also from the other side, using the cross piece to scrape off any cappings that may adhere to the knife.



Brushing bees off a comb.

The uncapped combs may next be placed one in each basket of the extractor, the top bar being placed next the hinge. It is quite worth while to use two combs of about the same weight; for if not perfectly balanced the extractor will run unsteadily, and may become loosened from its support. In case of old, dark combs whose cell walls are strengthened by many layers of cocoons, there will be but little danger of the combs breaking. When new combs are extracted—those in which brood has never been raised—greater care will be necessary to prevent the combs from breaking out of the frames. Such combs should be extracted until about half of the honey is out of the cells of the first side, the combs should be reversed and the opposite side entirely extracted, and then the remainder of the honey taken from the first side.

When the honey gets almost to the reel a part of it may be drawn off at the faucet, allowing it to run into a pail, which may then be emptied into the straining tank, from which it may be run into 60-pound cans or other receptacles in which it is to be stored.

As fast as the combs are extracted they may be again placed in the supers and stacked up in the honey-house. Along toward night these may be piled five or six on each hive, over a queen-excluder, leaving the bees to clean out the honey still adhering.

How and Where to Store Honey.

The best place for keeping honey is in a dry room of even temperature, about 70 to 100 degrees Fahr.

Honey should be stored in tin cans, and never in large tanks and left to candy, as it would be exceedingly difficult to remove it for bottling.



Shaking bees from a comb.

slightly to the right so that the cappings may fall freely, begin at the lower end of the comb and with an ordinary extracting knife dipped in hot water cut the cappings from the entire right side of the comb, performing the operation with a kind of sawing

OUR friends, especially those who are interested in the electric windmill, will doubtless recall I told you last fall I was planning to have the apparatus installed at my Florida home during the past winter. Well,

the electric corporation at Wyndmere, N. D., were behind on orders, and wrote me they could not give me an outfit last winter unless they could get some one of their customers to let them fill my order ahead of his own; but after they had offered considerably over a hundred dollars to have a nearby customer wait until spring they wrote me they greatly regretted being obliged to give it up. Well, at that time I had very much set my heart on having the arrangement right away, and had already at considerable expense shipped my electric auto down to Bradentown to have it in readiness, and felt as if I really could not give it up. And tho it might be to some extent a foolish notion I—to quote a line from that well-known hymn—"took it to the Lord in prayer," and I prayed over it, saying, of course, *if* my request were consistent with the Lord's holy will.

Now, you may think it a little strange, but I did not (after so many, and almost lifelong years of experience, in answer to prayer), that a telegram came saying they had made arrangements after all so they could send me an outfit. But with the telegram came a letter from our folks in Medina suggesting that it was too near spring, perhaps, and that I had better give it up. Mrs. Root also urged that I should wait until another winter; and after thinking it over I wrote them a letter to that effect. But after the letter had gone I did not feel satisfied, and I knelt down by my bedside and prayed over it. Now let me digress right here.

I had a praying mother, as I have perhaps many times told you. I often overheard her voice in prayer for one after another of her flock of seven children. As I was the weakest and feeblest one of the whole seven, perhaps she prayed for *me* a little more than for the others; and as the doctors told her she must keep me out of doors and get me interested in making garden, keeping chickens, etc., she and I were much together; and when troubles



O thou of little faith, wherefore didst thou doubt?

—MATT. 14:31.

Before they call I will answer.—ISA. 65:24.

Come unto me, all ye that labor and are heavy laden.—MATT. 11:28.

came up (and they were troubles, I assure you) when our finances were so low that it was sometimes hard work to provide food and fuel for the flock of seven, she sometimes used to say something like this: "Amos, you

need not worry about this trouble any more. I have been praying over it, and I have had the assurance that it will come out all right." And, dear reader, it rejoices my heart to be able to tell you that the matters mother prayed over *did* come out right in the end.

Well, after I had prayed over the matter of the electric outfit I too had a feeling (and a happy feeling it was) that it would come out all right, and there would be nothing wrong in sending a telegram to overtake the letter I had just written. So I wired the electric company to go ahead and ship my outfit as speedily as possible. When my message got there the temperature was away down below zero; but notwithstanding that, they pulled down a mill recently put up for their own use at the factory and shipped it by freight to Bradentown, Fla. Now, with the congestion on the railroads I knew it was risky business; but the whole outfit arrived in about three weeks—sooner than I had any reason to expect it. The whole outfit was sent by freight, as I told you; but the switchboard, being such a very important part of the apparatus, was sent by express in order to be dead sure it would be on hand. And, by the way, said switchboard has not reached Florida yet, so far as I know. The iron frame that holds it came thru promptly; but the switchboard itself has never been found. Now, in order to enable me to use the apparatus in a crude way, George put up a wooden switchboard with a temporary arrangement to start and stop the current according to the movement of the wind. After waiting for about two weeks, when George was badly wanted at the factory in North Dakota we were obliged to give it up, and he returned home. I assured him again and again that I should get mixed up on that temporary switchboard and get something wrong. My good father used to quote to us the old saying that it is hard work to teach an old dog new tricks; and as I approach 79 years

of age I begin to realize the truth of the saying more and more, almost every day. I told George that about as soon as he got well out of sight something would get wrong, and there would not be another man, woman, or child short of North Dakota who would be able to unravel the difficulty. Sure enough, about the day after he left, the cutoff that was to turn the current on the batteries when the wind blew hard enough would not work. I puzzled over the matter off and on all day, and went to bed feeling blue and discouraged. Yes, I prayed over it; but I had somehow lost faith in myself, and I am afraid I lost faith also in the dear Savior, who said, "Come unto me, all ye that are heavy laden, and I will give you rest." I am ashamed to say that I lay awake brooding over it during the night; but finally toward daylight I went to sleep. When I awoke, Mrs. Root had gone out to prepare breakfast. Let me digress a little once more.

In that splendid book, "The Christian's Secret of a Happy Life," the author tells of a poor man who was trudging along with a big bag of grain on his shoulder. A neighbor came up behind him and told him to get in and ride. Of course he did so, but he insisted on carrying the grain on his shoulder in the same way, and gave as a reason that it was too much to ask of the good neighbor to carry both himself and the bag of grain also. He would relieve the horse a little by carrying the grain himself. The good neighbor could not put it out of his head that it would be no harder on the horse if he would dump his heavy bag into the back end of the wagon and enjoy his ride. As I woke up that bright morning and got out of bed it occurred to me that I was about as bad as the idiotic fellow who insisted on bearing his burden when the neighbor invited him to cast it off. I knelt down again and prayed over the matter of the electric windmill. One of the things that contributed to my worry was that it was near the time set for Mrs. Root and me to go back to our Ohio home. What would be done with the electric windmill during the summer time if I did not ferret out the difficulty and get the machine to work? Another trouble that confronted me was that my good neighbor, Mr. Wheeler, who knew more about the apparatus than any other man, perhaps, in Florida, had recently planned to move his family down to Moore Haven—see his article in the June issue. Well, after I had gone right down on my knees and told the dear Savior all about my troubles I felt that I had the "assurance" as the dear mother used to express it.

After a good breakfast such as Mrs. Root always has ready for me, I went out expecting that I should be able to unravel the trouble. Let me say right here that one of the things that contribute most to my happiness in this world has been to meet with kind and pleasant people. You all know the effect of a kindly smile from a beautiful, intelligent woman—at least the men and boys do. Well, as I grow older I am glad to say that there is less and less difference between the smiles of a handsome woman, or, perhaps I should say, a good-looking woman or a woman who looks good—that is, it does not make much difference whether it is a *woman* who looks good or a man who looks good. On that particular morning when I went out and stood before that switchboard I met a young man with a pleasant smile on his face who seemed to me just then to be one of the best-looking men I ever met in my life. Yes, I had met him before somewhere; but while I was puzzling my brains to decide when and where, he said he had come to see the electric windmill so much talked about. Then I told him how greatly I regretted that it was "out of fix," and I had not sense enough in my old gray head to find out the trouble. At this he smiled even more pleasantly, and then, with a *still* pleasanter smile, said, "Perhaps, Mr. Root, I may be able to help you out of your trouble."

"Well, my good friend, I am ashamed to say that I can not recall just now where I have met you."

"Oh!" he replied, "you saw me at the electric-light plant down town."

Let me explain right here that in years past I had often looked thru the open door to see the massive engines and great dynamos that send electric light and power all over Bradentown and away out into the country. I think there is a sign across the door, reading "No Admittance," and so I had never ventured inside; but when George came around, one of the first points of interest to him was that electric-light plant; and I was agreeably surprised to find the foreman in charge so willing to show us all over and answer all our questions. Well, here was the answer to my prayer—not exactly what I had prayed for, but something far better; and how often it has happened just that way during this busy life of mine! It seemed to me just then that the good Lord had said to this foreman of that great electric-light works something as follows: "My old friend A. I. Root is in trouble with his electric windmill. While you are off from duty this morning, just go down and help him

out." After I had told him all my troubles he went out and looked at the windmill tower and said, "Let's see. Here are three copper wires coming down from the dynamo on top of the tower."

Now, I had asked George several times to explain about the third wire. I could readily understand how *two* wires should come down from the dynamo; but in spite of his explanations I could never get it thru my old brains why there was any need of a third wire; and, dear reader, I am ashamed to confess that I do not very well understand it yet. But my companion seemed to know all about it.

About this time I inquired his name. With another smile (may I call it a bewitching one?) he said, "Mr. Root, I have not got a very good name; but I try to be a good man all the same. My name is Kaiser."

Then he asked for a screwdriver and a pair of pliers.

"Sure," I replied; and then I showed him where the two tools were hanging up right near the switchboard. Let me remark right here that with the electric auto there came some very fine up-to-date tools; and one of the first things I did was to fix some nails in the wall where the tools could be hung up and at the same time I marked with a good black pencil the outline of each tool so it could be quickly put back in just the place where it belonged. In about five minutes after I had given him the pliers and screwdriver the cutoff was making its click in the orthodox way as the wind came up and went down. Then he looked over the batteries and seemed to be perfectly at home in regard to them as well as the electric part of the machine. He finally suggested that if it would be anything of an accommodation he would look after the batteries occasionally and give them a charge in order to save them

from damage by neglect, while I was gone north during the summer. It was finally arranged that he was to come and take out the auto and use it if he wished. When I asked him if he had ever run an electric automobile he replied something as follows:-

"Why, Mr. Root, I can not say that I have ever run an electric automobile; but as I have had quite a little experience up in the North in running *electric locomotives* I think that I can, no doubt, find out how to manage the auto, especially with the aid of the excellent book of instructions sent out by the makers, which I have looked over."

There, friends, you have the whole story up to date. The good Lord did not sharpen my wits as I expected he would; but he sent an expert to help me out of my trouble and also introduced to me a good friend who volunteered to help me in a way that I had not thought of until he suggested it.

Now, dear friends, let us look at this first text at the head of this Home paper once more—"O thou of little faith, wherefore didst thou doubt"; and then that other one containing the promise that the forces of this great universe should be started and set going, even before we get down on our knees before the Lord and remind him of his great and precious promises scattered all thru his precious word to the children whom he loves. And then that final text—"Come unto me, all ye that are heavy laden, and I will give you rest." When you are worrying about something so that you can not sleep during the night, remember that promise. But first of all, dear friends, get rid of all bitterness and all unkindness from your heart. Remember the text I have quoted so often—"If I regard iniquity in my heart, the Lord will not hear me." And then follow out closely that other text.



HIGH - PRESSURE GARDENING

CORN AND POTATOES WITH NO MISSING
HILLS, ETC.

I have year after year had more or less to say about selecting the ears out in the field in growing corn. As soon as you can find here and there an ear that is sufficiently mature, the kernels glazed and hard, gather your seed corn. If you take the first ears that mature, you will eventually get a strain of seed corn that will ripen

early before frost. We have not had any corn injured by frost for many years. Our plan is to put the ears of seed corn in a basket about the size of a common barrel, made of galvanized wire cloth. It is the same size of mesh and the same wire cloth that we use for our honey-extractors. This wire cloth is for the purpose of giving the corn fresh air to dry out thoroly, and at the same time exclude rats and mice. As

soon as cold weather comes, or before, this receptacle with those ears of corn is placed in a warm basement near the heating apparatus of the dwelling, and set about a foot or more above the floor. The bottom of the basket is also of wire cloth, to permit a free circulation of air. There it remains until it is planted at planting time. Each ear is then tested in the well-known way—that is, taking three or more kernels from each ear, and testing for germination.

Now, all the plans I have ever noticed in the agricultural papers require that a tag or label be placed on each ear of corn, and also a tag or label or number on the corn from each ear. Of course there may be many modifications of the plan to do this, but they have all seemed to me more or less fuss or bother. Fig. 1, I think, will make it clear to you with very little explanation how I manage it. We happened

basin beside the basket there was only one good plant out of three. For some reason the germination was poorer this year than for any winter I recall. You probably know all about this. As a rule we use for planting only the ears that give a high germination. A year ago when I asked the boys if there was not some replanting to be done, they replied they did not think there was a missing hill. In the whole cornfield there was scarcely a missing stalk. How much do you think it is worth to a farmer to have such a stand as that in the first planting?

At the time we selected the field of corn, I put on top some ears of sweet corn. Now let me tell you something. We plant three or four kinds of sweet corn so as to have them ripen one after another. As a consequence my sweet-corn seed would become more or less crossed. So I thought I would send to one of our great seedsmen



1. My plan of testing ears of seed corn before planting.

to have an unused shutter about 6 by 3 feet. This was raised up from the floor on four potato-boxes. Then some strips about an inch square were loosely tacked to the shutter—as shown in the picture. To keep from soiling the shutter, oiled papers, such as they have at the groceries, were placed down between the strips; and on this some potting soil such as they use in the greenhouse. Then the corn was laid on in rows as shown in the picture. Right opposite each ear of corn were placed three or four grains to germinate. The oiled paper under the soil was simply to keep the shutter from being made muddy by the soil. You will notice in the ears where I have picked out the grains. Picture, No. 2, shows the outcome. Every kernel taken from the ears in the bushel basket made a good strong corn plant. In that half-bushel basket every kernel gave a strong plant but one; and in the

and get some Golden Bantam that was absolutely pure. What do you think it cost? Only 60 cents a pound. Don't you think it will pay to grow your own garden seed? Let me give you another illustration.

When we were gathering our lima beans last summer there would be here and there a pod that was too ripe for cooking. Mrs. Root put all of these pods in a paper bag, and they were put into a cupboard and forgotten until she cleaned house this spring. I shelled them and planted quite a good row about May 25. Before I thought it was possible for the beans to be up I had the best stand of lima beans I ever saw—great thrifty stalks and big sturdy leaves. It was the result of “home-grown” seeds. Later I found I wanted a few more lima beans, and what do you suppose *they* cost? Forty cents a pound, when I bought them by the bulk! Now, if you want only a few, say a 5-cent paper, it may not pay to



2. The result of testing corn as shown in Fig. 1; also some potato plants ready to be placed in the field, with a picture of the spade used for loosening up the sod of growing plants.

gather it from your own garden; but when it comes to paying out forty to fifty cents a pound for sweet corn and bush lima beans, you had better take some way of finding a short cut "from the grower to the consumer." Look over every seed catalog (You probably have a pile of them at your elbow), and see how much you could save by growing your own corn, beans, and other seeds instead of paying a seedsman's prices.* Why, just plain navy beans are quoted in the seed catalogs at 50 cents a pound! If you go to the groceries to get some navy beans to eat, you will find they

*Of course, the price of 40 to 60 cents per pound includes postage, but *nobody* has any postage to pay on seeds you grow yourself.

are 20 to 25 cents a pound, and they are not perishable at all—that is, you do not have to use them as soon as they are ripe. You can just put them in a tight paper bag and keep them for *two years* or more.

You will notice, besides the basket of seed corn, there are some other things in the picture; and notwithstanding all I have said about my "new invention" of transplanting potatoes I have something more to say about it. When I first got back from Florida, the only early potatoes I could get at the seedstore were Burpee's Extra Early, and the price was not at all extravagant—50 cents a peck. Well, I cut the peck so as to make about 300 eyes, and planted them in a little bed about four by



3. A bed of potato plants started from one eye, and ready to be taken out and moved to the field.

five feet. Picture 3 shows the potatoes after they had been planted about four weeks. I left them longer than I wished to, because the ground was too wet to plant them out. If it had been down in Florida on our light, sandy, mucky soil, it would not have done much harm; but here in our Medina yellow clay it was a task, I tell you, to get those little potato plants separated. The roots had intertwined themselves so as to make a perfect mat. In picture 2 I laid two of the potato plants on a board right beside the spade; and, by the way, this spade is the implement I used to pry up a sod of potato plants. If your soil is as loose as it should be made with manure and sand and muck, you will find the roots down quite a piece. After the plants are torn apart, saving all the roots possible, and also letting a lot of that rich soil go with them, we load them in half-bushel baskets like the one in the figure. Then they are carried to the field and dropped the right distance in a furrow. Well, down in Florida, and up here in Ohio, potatoes transplant so easily that not a plant in the whole 300 gave any evidence of having been moved. They kept right on growing and a week later they were hoed and cultivated. A week or ten days after they were planted out I went over the patch to see if I could find a missing hill. There were not only no missing hills, but there was not a feeble-looking plant in the whole plot.

It might occur to you that this is the wrong time of year to talk about planting potatoes in GLEANINGS for July. Not so, friends. Down in Florida we estimate we got ahead a month by transplanting potatoes, and by having great thrifty plants because of the very rich composted soil inside of the plant bed. Well, my good friends, our President and a host of officials under him are urging us to make the most of our gardens. When this reaches you, or a little later, there will be quite a little stuff in your garden matured and gathered—early peas, radishes, lettuce, perhaps early potatoes, etc. Now I will tell you what to do. If you can get some potatoes in good condition to plant (and I think you can), make a little plant bed at once as I have described; and as fast as your early crops are removed, put in, not cabbage plants, but potato plants. We have for years got good crops of early potatoes by planting them just about July 4; and these potatoes grown late make the very best of seed for planting the following spring. If you have good plants ready like the ones shown in the picture, and get them into good ground as late as Aug. 1, most of you can grow good potatoes.

IF I REGARD INIQUITY IN MY HEART THE
LORD WILL NOT HEAR ME.

I clip the following paragraph from *The American Issue* of Feb. 2:

Many devout people believe God is withholding ultimate triumph from the allied cause until booze is banished in all lands interested in justice and liberty. Some of the age-long prophecies are being literally fulfilled before our eyes. The entrenched wrongs of centuries are being undermined and uprooted. This is the most solemn hour in the history of humanity. The liberties of humanity are trembling in the balance and God is calling to his people to banish booze and win the war and usher in the millennium.

Ever since the war started, or even before the war, I have, in my humble way, tried to make it clear that the reason why God does not hear the prayers of the good people of our U. S. or perhaps why God cannot hear and answer, is because of our tolerance of the liquor traffic. And just of late, when the heads of our nation were not only closing industries, but even our schools and churches, not a word was said about the breweries, and the tons and tons of coal they are using day and night, year in and year out. Garfield, Hoover, and our beloved President, for some reason, while racking their brains for a remedy, seem to have overlooked the breweries. In this same copy of *The American Issue*, testimonies are given from the presidents of a large number of our American coal companies to the effect that *drink* cuts off the output of coal to an enormous extent, especially after every pay day. *Banish booze and the war will end.* Are there no Calebs and Joshuas, nowadays, who are not afraid to come out and stand *alone*, if need be?

ANOTHER "EMANCIPATION PROCLAMATION"
NEEDED.

We clip the below from the *Elyria Telegram*:

President Wilson will never rise to the majesty of his high office and his plain duty in these trying times until he prohibits the sale of intoxicating liquors. His proclamation doing so will take its place in history along side that of the immortal Lincoln emancipating the slaves, and Wilson will stand a heroic character measuring up to Lincoln's height in moral courage and purpose and accomplishment.

ALL NATIONS DRY.

According to *American Issue* Captain Richmond P. Hobson recently said:

"Out of this war all nations will emerge dry. For the first time we shall have a sober world, and then we shall start all over again upon the building of a new civilization. In that civilization there will be no place for degradation, for wars and strikes.

"Just as soon as we solve this problem of prohibition, we will solve the problems of man-power, of financial power, of productive power—and we will solve the war problem.

"Under prohibition the United States can maintain 10,000,000 men in France without effort. We can finance America and all her allies on the new wealth created. And that day is drawing near."

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

FOR SALE.—New crop clover extracted honey, 20c per pound; 2 60-lb. cans to case.
H. G. Quirin, Bellevue, Ohio.

FOR SALE.—To the highest bidder, my crop of white clover extracted honey, from 300 colonies bees. Purchaser to furnish containers.
L. S. Griggs, 711 Avon St., Flint, Mich.

HONEY AND WAX WANTED

Small lots of off-grade honey for baking purposes.
C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

WANTED.—Comb and extracted honey.
J. E. Harris, Morristown, Tenn.

WANTED.—Extracted honey.
J. Damit, 3718 Diversey Ave., Chicago, Ills.

Cash at your bank for carlots and less of comb and extracted honey.

Wesley Foster, Boulder, Colo.

BEEWAX WANTED.—For manufacture into Weed Process Foundation on shares.
Superior Honey Co., Ogden, Utah.

WANTED.—Well ripened amber and clover honey; state price, how packed, and send sample. L. P. Zimmerman, 436 E. Market St., Louisville, Ky.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston.
M. V. Facey, Preston, Minn.

WANTED.—Extracted honey, carload or less quantity. We can supply 5-gallon cans for your crop if needed.

Hoffman & Hauck, Richmond Hill, N. Y.

WANTED.—Extracted honey, all kinds and grades for export purposes. Any quantity. Please send samples and quotations.
Betancourt & Leganoa, 59 Pearl St., New York City.

BEEWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

WANTED.—Beeswax. We will pay for average quality beeswax delivered at Medina, 36c cash, 38c trade. We will pay 1 to 2c extra for choice yellow. Be sure your shipment bears your name and address as shipper so we can identify it on arrival.
The A. I. Root Co., Medina, Ohio.

HONEY WANTED.—We are in the market at all times for unlimited quantities of honey, both comb and extracted. Before selling your crop let us hear from you, quoting your lowest price, either f. o. b. your station or delivered Cincinnati. If extracted, mail sample, state how it is put up; if comb honey, state grade and how packed.

C. H. W. Weber & Co., Cincinnati, Ohio.

FOR SALE

BASSWOOD AND EVERGREEN TREES.—Send for list. Hansen Nursery Co., Niles, Mich.

HONEY LABELS.—Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Conn.

FOR SALE.—A full line of Root's goods at Root's prices.
A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—150 ten-frame extracting supers, 100 excluders. R. G. McAllister, Corvallis, Ore.

FOR SALE.—Barnes saw, foot and hand power.
W. F. D'Allaird, Ballston Lake, N. Y. Box 8.

SEND TODAY for samples of latest honey labels. Liberty Pub. Co., Sta. D, Box 4E, Cleveland, Ohio.

FOR SALE.—300 boxes extra good second-hand cases at 65c per box of two cases.
Manley Bros. Sandusky, Mich.

FOR SALE.—About 200 empty combs, Hoffman frames. Address
D. J. Miller, Millersburg, Ohio, Rt. 4.

Beekeepers, let us send you our catalog of hives, smokers, foundations, veils, etc. They are nice and cheap.
White Mfg. Co., Paris, Tex.

FOR SALE.—A lot of second-hand honey kegs and 60-lb. cans, two in a case, 500 4¼x4¼ sections. Write for prices. J. H. Taylor, Parksville, N. Y.

Pennsylvania Distributors for Root Bee Supplies, save time and transportation expense on all standard hives, sections, etc., at catalog prices.
Prothero, Bailey & Goodwin, Dubois, Pa.

\$5.00 A DAY GATHERING EVERGREENS, ROOTS and Herbs. Ginseng, \$14 a lb., Belladonna Seed, \$64 a lb. or grow it yourself. Book and war prices free. Botanical 18, New Haven, Conn.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE CHEAP.—Used one season A1 shape, 500 complete Root 10-frame supers for plain sections; 200 10-frame Root body boxes and Hoffman frames; 100 swarms of bees. Buckeye Shade Tree Co., 2255 Waterworks Drive, Toledo, O.

FOR SALE.—Tame rabbits, any color or number. Breeding stock, 4 to 5 months old, \$2.00 per pair. Prompt shipment. Order now.
George Tebbe, Dow City, Iowa.

WANTS AND EXCHANGE

To exchange, cream separator for bee hives, frames and supers. Irvin Fuller, Proctorville, O.

WANTED.—Audubon Johnson, formerly of Simi, Cal., to write me. F. A. Alexander, Ontario, Cal.

WANTED.—A Buffalo robe. State size, condition, and price in first letter.
Cecil Shepard, Rochester, N. H.

WANTED.—A good honey location to start a line of apiaries. Will give suitable reward for the best reliable information. D. E. Lhommeidieu, Colo, Iowa.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

WANTED.—In eastern or central New York a good clover and buckwheat location suitable for a few yards of bees. Would consider buying all or part of small bee business.

John Vandenberg, Fort Plain, N. Y., Rt. 3.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slungum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you.
Dadant & Sons, Hamilton, Illinois.

REAL ESTATE

\$2,000 cash takes a fine Florida farm of 10 acres, all improved, including stock and crops; also 60 colonies of bees in modern hives.

C. Mack, Mannville, R. D. No. 1, Fla.

BEAUTIFUL HOME FARM, improved rich soil, well located, good buildings, 100 colonies of bees, up to date; best honey-producing location in the State; not crowded; average for past 7 years, 105 lbs., 5 acres of ginseng and goldenseal, all ages, in fine shape; half artificial shade, half natural. Will sell a part or all of seng-seal. A wonderful opportunity—a bargain. Reason for selling, poor health.

W. M. Penrod, Ronneby, Minn.

A small California farm earns more money with less work. Raise the crops you know about—alfalfa, wheat, barley, etc.—also oranges, grapes, olives, and figs. Ideal for dairying, pigs, and chickens. No cold weather; rich soil; low prices; easy terms; good roads, schools and churches. Enjoy life here. New comers welcome. Write for our San Joaquin Valley, also Dairying and Poultry Raising illustrated folders free. C. L. Seagraves, Ind. Com. A. T. & S. F. Ry., 1927 Railway Exchange, Chicago.

BEEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, R. D. No. 3, Vincennes, Ind.

Try Phelps' Golden queens and be convinced, \$1.00 each. C. W. Phelps, Binghamton, N. Y.

BEEES.—200 colonies to lease or sell in case I am drafted. C. S. Watts, Monticello, Ill.

Italian Bees and Queens; write for circular. Ira C. Smith, Dundee, Ore.

FOR SALE.—Untested Golden Italian queens, 75c each. J. F. Michael, Winchester, Ind.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Courtland St., New York.

FOR SALE.—1918 Golden Italian queens; price list free. Write E. E. Lawrence, Doniphan, Mo.

When it's GOLDEN it's PHELPS. Queens, \$1.00. C. W. Phelps & Son, Binghamton, N. Y.

"SHE SUIT ME" Italian queens; \$1.00 from May 15th to Oct. 15th. Allan Latham, Norwichtown, Conn.

Italian queens, The HONEY GATHERERS. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

Hardy Italian queens. The busy kind, no culls. Must please. \$1.00 each. W. G. Lauver, Middletown, R. D. 3, Pa.

FOR SALE.—Three-band Italian queens. Untested, \$1.00; 6, \$5.00; 12, \$9.00. Tested queens, \$1.50 each. Robt. B. Spicer, Wharton, N. J.

Try ALEXANDER'S Italian queens for results. Untested, each, \$1.00; 6 for \$5.00; \$9.00 per doz. C. F. Alexander, Campbell, Calif.

Finest Italian queens, \$1.00 each; 6 for \$5.00. My methods free. J. W. Romberger, 3113 Locust St., St. Joseph, Mo.

THREE-BAND ITALIANS ONLY. Untested queens, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50. H. G. Dunn, The Willows, San Jose, Calif.

FOR SALE.—Fine Italian queens, 75c each, \$8.00 per dozen. Safe arrival guaranteed. T. J. Talley, Greenville, Ala., Rt. No. 3.

Tested leather-colored queens, \$2.00; after June 1, \$1.50; untested, \$1.00; \$10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

PHELPS queens will please you, \$1.00.

C. W. Phelps & Son, Binghamton, N. Y.

FOR SALE.—Three-banded Italian queens, safe arrival guaranteed. Write for prices. J. A. Jones & Son, Hope Hull, Montgomery Co., Ala.

FOR SALE.—Pure-bred Italian queens; also a few hundred pounds of bees. Queens ready April 15. Orders filled promptly or money returned. O. P. Hendrix, West Point, Miss.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1; 6 for \$5. Wm. S. Barnett, Barnetts, Va.

Wisconsin-bred three-banded Italian queens, untested, \$1.00; tested, \$1.50; six or more 10 per cent less. Choice one-year-old breeders, \$3.00 each. Lewis Francisco, Dancy, Wis.

FOR SALE.—50 colonies of Italian bees (no disease), 1,000 extracting combs, wired Hoffman frames on foundation, extractor, steam knife, tanks, etc. J. R. Simmons, Harvey, Ills.

FOR SALE.—Golden Italian queens of an improved strain; the bee for honey, hardiness, gentleness, and beauty. Untested, \$1.00; tested, \$2.00. Wallace R. Beaver, Lincoln, Ill.

Three-banded Italian queens at Shenandoah Apiary, ready May 15. Tested, \$1.25; untested, \$1.00; dozen, \$8.00.

S. Click, Box 16, Rt. 2, Mt. Jackson, Va.

Bright Italian queens, ready April 15th, \$1.00 each. Safe arrival guaranteed. Write for prices of larger quantities.

W. W. Talley, Greenville, Ala., Rt. 4.

GOLDENS THAT ARE TRUE TO NAME. Untested queens, each, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50.

Garden City Apiaries, San Jose, Calif.

Italian queens. Golden and 3-banded bred from best selected stock. Untested, each, 75c; 6, \$4.25; 12, \$8.25. Select untested, \$1.00 each. Satisfaction guaranteed. G. H. Merrill, Liberty, S. C.

FOR SALE.—Golden Italian queens which produce gentle yellow bees, the hardest workers we have known. Untested, \$1.00, tested \$1.50. Wildflower Apiaries, So. Trust Bldg., Little Rock, Ark.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey gatherers as can be found; each \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

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QUEENS.—We are breeding from the best Italian stock. Untested, \$1.00; select untested, \$1.50; tested, \$2.00. We have been breeding queens for more than 20 years. We guarantee safe arrival.

E. A. Simmons, Greenville, Ala.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, \$1.00; 6, \$5.00; tested, \$3.00; breeders, \$5.00 and \$10.00.

C. W. Phelps & Sons, Wilcox St., Binghamton, N. Y.

FOR SALE.—Three-band Italian queens from best honey-gathering strain obtainable. Untested queens, \$1.00 each; 6, \$5.00; 12, \$9.00. Safe arrival and satisfaction guaranteed.

W. T. Perdue, Ft. Deposit, Ala.

Golden Italian queens that produce gentle and good honey-gathering bees. No foul brood. Select tested, \$1.25; tested, \$1.00; untested, 75c; 6, \$4.25; 12, \$8.00. No nuclei or bees for sale.

D. T. Gaster, Randleman, N. C., R. D. No. 2.

ITALIAN QUEENS.—The best I have ever had; untested each \$1; five, \$4.50; ten, \$8; twenty, \$15; fifty, \$35; 100 for \$60. Delivery beginning in June. Orders filled on time and safe arrival guaranteed. J. B. Hollopeter, Queen Breeder, Rockton, Pa.

Three band Italian queens, untested, \$1.00; select tested, \$1.25; tested, \$1.50; select tested, \$2.25. H. W. Fulmer, Box G, Point Pleasant, Pa.

Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolans. Tested, \$1.00 each; untested 75 cts. each. Bees per lb., \$1.50; nuclei, per frame, \$1.50. Send your order for bees early.

C. B. Bankston & Co., Buffalo, Leon Co., Tex.

North Carolina bred Italian queens of Dr. C. C. Miller's famous strain of three-band Italian bees, gentle and good honey-gatherers. July 1 until Oct. 1, untested, 85c each, 12, \$9.00; tested, \$1.25 each, 12, \$14.00; select tested, \$1.75 each. Safe arrival and satisfaction guaranteed.

L. Parker, Benson, N. C., R. F. D. No. 2.

PURE ITALIAN QUEENS. Goldens that are GOLDEN and Doolittle's choice stock. Select untested (laying queens), one, \$1.00; 6, \$5.00; tested, \$1.50; best breeders, \$5.00. For large lots write for prices. Pure mating, safe arrival and satisfaction I guarantee.

J. E. Wing, 155 Schiele Ave., San Jose, Calif.

ITALIAN QUEENS.—Northern-bred three-banded, highest grade, select untested, guaranteed, queen and drone mothers are chosen from colonies noted for honey production, hardiness, prolificness, gentleness and perfect markings. Price, 1, \$1.00; 12, \$10.00; 50, \$35.00. Send for circular.

J. H. Haughey, Berrien Springs, Mich.

FOR SALE.—Achor's Pure Italian Queens, hardy and prolific. No disease. Satisfaction guaranteed. Before June 16, untested, 1 for 90c; 12 for \$10.00; tested, 1 for \$1.50; 12 for \$16.50. After June 16, untested, 1 for 75c; 6 for \$4.25; 12 for \$8.00; 50 or more, 65c each; tested, 1 for \$1.25; 6 for \$7.00. Best breeder, \$3.00.

W. D. Achor, Fitzpatrick, Ala.

Warranted queens from one of Dr. Miller's breeders, \$1.00 each, \$10.00 per doz. Tested queens, \$1.50 each. One-frame nuclei, \$1.50; two-frame, \$3.00; three-frame, \$4.50; without queens. Add price of queen if wanted. Our apiaries have been inspected and are free of disease. Ten-frame colonies, \$10.00; eight-frame, \$9.00; Danz, colonies, \$8.00 each, with tested queens. We are sold out of pound packages.

Geo. A. Hummer & Sons, Prairie Point, Miss.

Fine queens of Dr. Miller and Walker's stock, \$1.00 each, 6 for \$5.00, 12 for \$9.00, 100 for \$75.00.

Testimony of Mr. J. M. Meadow, Dorton, Tenn. "I have in my yard queens from four different breeders. Walker's beats them all."

Testimony of Mr. A. K. Whidden, San Jacinto, Cal., Bee Inspector of Riverside Co., "I have just inspected an apiary for Roy Bateman. They were requeened with your queens. The superiority of those queens was so marked that I want 100 or more." Curd Walker, Queen-breeder, Jellico, Tenn.

HELP WANTED

WANTED AT ONCE.—One or more men to work with bees. State age, experience, wages and give reference. Permanent place to right man.

The Rocky Mountain Bee Co., Billings, Mont.

WANTED.—Young men of energy and character, of clean habits, not eligible for military duty, as helpers in our extensive bee-business. Fine chance to learn. Write immediately, giving wages, age, height, weight, experience, and references all in first letter, or expect no answer.

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WANTED.—Industrious young man, fast worker, as a student helper in our large bee business for 1918 season. Truck used for outyards and hauling. Apiaries located near summer resorts. Will give results of long experience and board and small wages. Give age, weight, experience, and wages in first letter.

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have a record of 30 years. Queens ready in June. Untested, each, \$1.25; 6, \$6; tested, each, \$1.75; 6, \$9.50. July and later: Untested, \$1; 6, \$5.50; tested, \$1.50; 6, \$9.00. Every queen guaranteed.

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Italian Northern Bred Queens. Very gentle and hardy. Great workers. Untested, \$1; 6 for \$5. Circular on application. Queens delivered after June 1.

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August Lotz Company, Boyd, Wis

Queens of MOORE'S STRAIN of Italians

PRODUCE WORKERS

That fill the super quick

With honey nice and thick

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Untested queens, \$1.00; six, \$5.50; 12, \$10.00. Select untested, \$1.25; six, \$6.50; 12, \$12.00. Safe arrival and satisfaction guaranteed.

Circular free.

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Route 1, Morgan, Ky.

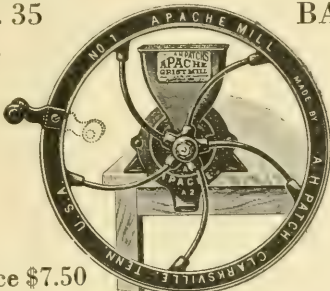
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Do all sorts of fine and coarse grinding with an

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Price \$7.50

This Mill Makes Best Corn Meal, Graham Flour, Rye Flour, Chops, Hominy, Cracks Peas, Grinds Coffee, Spices, etc. Perfect adjustment for coarse or fine work. Will send Mill prepaid by Express \$7.50

APACHE CRIST MILL—Largest capacity, fastest grinding, easiest turning handmill. Does more, lasts longer.

A. H. Patch, Inc., Clarksville, Tenn.
The Blackhawk Corn Sheller Inventor
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At a bargain, nearly new 19x20 Skinner Simple right hand, center crank engine. This engine has been run only four years and it is in first class condition. At 130 pounds steam pressure develops 325 H. P., speed 200 revolutions per minute. The shaft is long enough to hold an alternator. Engine can be seen running at our plant any time up to July, 1918, when it will be replaced by a larger unit. Reason for selling, need more power. Not a worn-out outfit in any sense of the word, but a modern, efficient engine and a real bargain for the right party.

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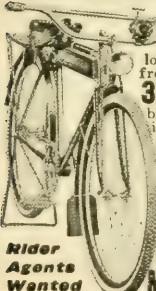
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SEND NO MONEY but write today for the big new Catalog. It's free.

MEAD CYCLE COMPANY
Dept. G153, Chicago



Rider Agents Wanted

Our Food Page—Continued from page 413.

At night make a sponge of half the liquid, the yeast which has been softened in one cup of it, the potatoes, salt, honey, and enough flour to make a thin batter. Cover closely and let rise over night. In the morning add the rest of the liquid warmed, the Cream of Maize and rolled oats and enough flour to make a stiff dough. Sift the soda in with the flour. Knead until smooth and elastic, cover and let rise until doubled in bulk. When light, divide into four loaves and let rise again. When light, bake in a moderate oven about one hour. For liquid you may use potato water or half milk and half water, adding the milk in the morning. In order to make good bread with the substitutes and flour as milled at present you should use a much larger proportion of flour to liquid.

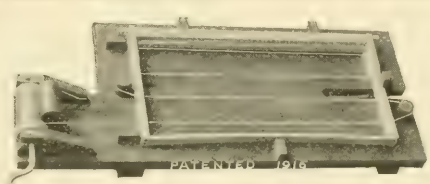
CORNMEAL MUSH. BY DR. MILLER'S REQUEST.
One part cornmeal Salt to taste; about 1
3 to 4 parts boiling wa- scant teaspoon to each
ter cup of cornmeal.

Put the cornmeal and salt in the upper part of a double boiler, slowly pour over it the boiling water, stirring all the time to keep it smooth. Let it cook over the fire until it has thickened and begun to bubble, then put it over the lower part of the double boiler, making sure that the water does not boil away before it is done. Let it cook three or four hours or longer. As some meal has more absorbing power than others, it may be necessary to add a little more boiling water after it has thickened. We sometimes let it cook over night with the simmering burner turned low.

HONEY RASPBERRY PRESERVES.
1 pint red raspberries 1 pint rhubarb cut small
3 cups honey

Pour the honey over the raspberries and rhubarb and leave several hours or over night. Put over the fire and simmer slowly until thick or until the juice drips from the side of a spoon in two or more rows of drops. Put in jelly glasses and cover with melted paraffin when cold, or seal while hot in jars.

CONSERVATION SHORTCAKE.
1½ cups barley flour 3 tablespoons shortening
¾ cup rice flour 1 teaspoon salt
5 teaspoons baking pow- milk
der
Sift the flour, baking powder, and salt to-



WRIGHT'S FRAME-WIRING DEVICE
Most rapid in use. Saves cost of machine in one day. Tighter wires; no kinks; no sore hands.
Price, \$2.50, postpaid in U. S. A.
G. W. Wright Company, Azusa California

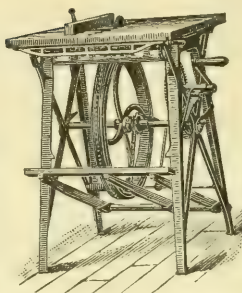
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This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

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A. T. SPITZER, Pres.
E. R. ROOT, Vice-Pres.
E. B. SPITZER, Cashier

ASSETS OVER ONE MILLION DOLLARS

Our Food Page—Continued from page 443.

gether, cut in the shortening with two knives and add milk enough to make a soft dough. Pat rather than roll into individual biscuits. Make them rather thick as the substitute flours do not rise as high as wheat flour. Bake in a moderate oven, split, butter, and pour over any sweetened fruit in season. All barley flour may be used or corn flour may be substituted for the rice flour.

STEAMED BROWN BREAD.

- | | |
|----------------------|-----------------------------------|
| 1 cup barley flour | 2/3 cup honey |
| 1 cup cornmeal | 1 cup water |
| 1 cup rolled oats | 3/4 cup sour milk |
| 1 teaspoon salt | 1 cup raisins or nuts if desired. |
| 1 1/2 teaspoons soda | |

Measure the barley flour before sifting, add the soda and salt and sift and then mix with rolled oats and cornmeal. Combine the honey, water, and sour milk, stir in the dry ingredients, add the raisins which have been steamed until tender, pour into a mold and steam three hours. It may be steamed in three one-pound baking-powder cans.

ROLLED OATS PIECRUST.

- | | |
|------------------------|---------------------|
| 2 cups rolled oats | 1 teaspoon salt |
| 2 teaspoons shortening | 1 cup boiling water |

Pour the boiling water over the salt, the rolled oats, and the shortening, stirring just enough to make sure all the oats have been scalded. When cool roll out as ordinary piecrust. It is easier to make it into individual pies. A little cream brushed over the top crust is a great improvement. If the oats are first put through an ordinary food chopper, the crust is easier to handle.

BARLEY FLOUR CAKE.

- | | |
|---------------------|---------------------------|
| 1/4 cup shortening | 2 1/4 cups barley flour |
| 1/2 cup brown sugar | 2 teaspoons baking powder |
| 2 eggs | der |
| 1/2 cup honey | 1 teaspoon soda |
| 3/4 cup sour milk | 1/2 teaspoon salt |

Spice or flavor to taste

Cream the shortening and brown sugar together, beat in the eggs and then the honey, add the flour, in which the dry ingredients have been sifted, a little at a time alternating with the sour milk. Use spice or flavor to taste. Raisins or nuts may be added. Bake in a shallow pan about 45 minutes. As barley flour varies in absorbing power a little more or less may be needed.

All measurements level.

"Best" Hand Lantern



A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc., needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog.

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WASHINGTON, D. C.

IRON AGE

Farm, Garden and Orchard Tools

Answer the farmers' big questions. How can I grow crops with less help? How dig potatoes with fewer horses and men? How save every tuber before the frost and in time for the best market?

Engine
IRON AGE Potato Digger



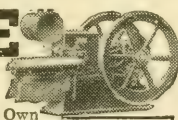
will dig your potatoes in two-thirds the usual time. Saves two horses for other work. Operated by 4-12 H. P. air-cooled "New Way" Engine. You can stop the Digger and the engine will clear the machine. Automatic throw-out clutch prevents breakage. Engine is quickly interchangeable for Iron Age Engine Sprayer. We also make three other styles, one of which will surely meet your condition. We make a full line of potato machinery. Send for booklet today.

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Kero-Oil Engines

Twice the Power at Half the Cost
Sizes 2 to 30 H.P.—Select Your Own
Terms—Direct-from-Factory prices. Write
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Shipment. Big new catalog, "How to Judge
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Money Back
if not satisfied
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New 90 Day
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QUEENS

Bred for Honey Production

That are gentle and hardy. Reared from the best mothers by the best known methods. We will have 2000 mating nuclei in operation by June 15th.

We may have some pound packages to offer after June 15th but are not in position to say until about June 10th to 15th. Safe arrival and satisfaction guaranteed.

One untested, 75c each; 12 to 100, 60c each. Full colony in 8-fr. hive with tested queen, \$9.00; 10-fr. hive, \$10.00. Can make prompt shipment of these.

The Penn Company
Penn, Lowndes Co., Miss.

Dr. Miller QUEENS

We are again rearing queens from mothers supplied by Dr. Miller from his apiary. These bees are proving to be very gentle as well as hardy and resistant to Foul Brood. Two queen-breeders not interested in us at all have declared them to be the gentlest bees they ever saw. Our list of customers that demand Miller Strain is growing fast. Remember that we are the only breeders that get breeders direct from Dr. Miller. Can you find a man more able than Dr. Miller to select your breeding queens? Besides that he has the material that he has been working on for over fifty years to select from. Safe arrival and satisfaction guaranteed.

One untested, \$1.00; 12 for \$10; 25 or more, 75c each.

The Stover Apiaries
Penn, Miss.
Formerly of Mayhew, Miss.

Don't Lose Any More Wax

Beekeepers: Let us print you some cloth or manilla tags to go on your shipments of wax with your name and address. That is the only safe way to be sure your wax isn't lost in transit.

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All boxed, ready to ship at once; 275,000 Hoffman frames, also Jumbo and Shallow frames, of all kinds, 100 and 200 in a box. Big stock of Sections, and fine polished Dovetailed Hives and Supers. I can give you big bargains. Send for a new price-list. I can save you money.

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QUEENS

Quirin's Improved Superior Italian Bees and Queens. They are Northern Bred and Hardy. . 25 Years a Queen-breeder

PRICES	Before July 1st			After July 1st		
	1	6	12	1	6	12
Select untested....	1.50	8.00	15.00	1.00	5.50	10.00
Tested	2.00	10.00	18.00	1.50	8.00	14.00
Select tested	2.50	14.00	25.00	2.00	10.00	18.00
2-comb nuclei	4.00	22.00	42.00	3.50	18.00	35.00
3-comb nuclei ..	6.00	33.00	60.00	4.50	25.00	45.00
8-frame colonies ..	10.00	55.00		8.00	45.00	
10-frame colonies ..	12.00	68.00		10.00	55.00	
1-lb pkg. bees	3.00	16.00		2.50	14.00	
2-lb. pkg. bees.....	5.00	28.00		4.50	25.00	

BREEDERS.—The cream selected from our entire stock of outyards; nothing better. These breeders, \$5.00 each.

Can furnish bees on Danzenbaker and L. or Hoffman frames.

Above price on bees by pound, nuclei, and colonies do not include queen. You are to select such queen as you wish with the bees, and add the price.

No bees by pound sent out till first of June. Breeders, select tested, and tested queens can be sent out as early as weather will permit.

Send for testimonials. Orders booked now. Reference—any large supply dealer or any bank having Dun's reference book.

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Queens of Quality

Select three-band Italians; bred for business. Untested, \$1.00 each; six for \$5.00; \$9.00 per dozen. Circular free.

J. I. Banks, Dowlstown, Tennessee

BEES Tested Italian Queens, \$1.50

We furnish full colonies of bees in single-walled and double-walled hives. Nucleus colonies and bees by the pound.

Write for what you need.

I. J. Stringham . . Glen Cove, N. Y.

Mott's Northern-bred Italian Queens

are hardy, prolific, gentle, and hustlers, therefore resist well disease.

Untested, \$1.00 each; \$9.00 for 12.

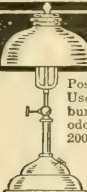
Select Tested, \$1.50 each.

Virgins, 50c each; or three for \$1.00.

Bees by pound.

Plans "How to Introduce Queens," and "Increase," 25c. List free.

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did you get what you were looking for? Were they thrifty, hardy, gentle, and beautiful? Were they the Imported Queens Americanized? Were they guaranteed to reach you in good condition, to be purely mated and to give perfect satisfaction? These are the qualities that have enabled

FOREHAND'S THREE-BAND---the thrifty kind

to stand over a quarter of a century of actual test, that has brought them up to a standard SURPASSED BY NONE, BUT SUPERIOR TO MANY.

	1	6	12
Untested	\$1.00	\$5.00	\$9.00
Select Untested	1.25	7.00	11.00
Tested	1.50	8.75	17.00
Select Tested	2.00	11.00	20.00

Our prices will continue the same until July. Write for circular.

W. J. FOREHAND & SONS, Fort Deposit, Alabama



Our Bees Are Gentle

Our queens are very prolific. Our bees are hustlers for honey but they

Sting the Kaiser

by helping out on the food shortage.

Our price for untested: 1 to 4, \$1 each; 4 to 6, 95 cents each; 6 to 9, 85 cents; 9 to 12, 80 cents each; 12 to 24, 75 cents each. Tested, \$1.50 each.

Safe arrival and satisfaction guaranteed. Write for our booklet and complete price list.

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Route 3 - Vincennes, Ind.

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Three-banded and Golden Italians. The best of either. They are hustlers—gentle to handle, cap their honey white, are very resistant to European foul brood. We have added B. M. Caraway's queen-rearing outfit to ours; also have with us one of his assistants, so we hope to fill all orders promptly. Satisfaction and safe arrival guaranteed. Reference: The Guaranty State Bank, Robstown, Texas, or The City Nat. Bank, Corpus Christi, Texas.

	1	6	12	50	100
Untested Queens	\$1.15	\$ 6.35	\$11.50	\$43.70	\$ 85.00
Select Tested	2.50	11.50	20.70	74.75	138.00

Get our prices on empty bee-cages. *Circular Free.*

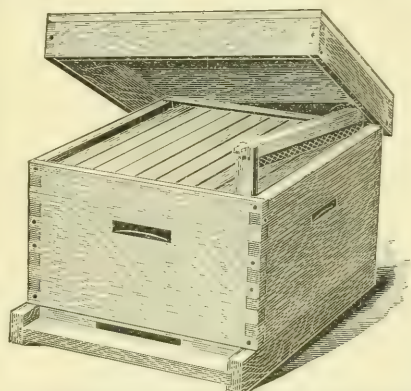
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KRETCHMER MFG. CO.

Department G

301 11th Avenue, Council Bluffs, Iowa

Full Values in "falcon" Beekeepers' Supplies

For the last forty years during our manufacture of "FALCON" supplies it has been our endeavor to place upon the market the best possible line of supplies. And we pride ourselves in having accomplished this. "FALCON" supplies have not only been recognized as the best in this country, but also a leader in other countries. Nothing expresses the superiority of the "FALCON" ware better than the many kind and pleasing words we receive from our satisfied customers, and the ever-increasing demand for "FALCON" supplies.

The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid

Dealers Everywhere

"Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from.

NOT SO BAD!



ATELY the railroads and express companies have been giving us better service; so we have been able to ship goods pretty promptly. At this time of the year if you only need a few supplies like foundation and sections and want quick delivery at your door, better order by mail. Always include enough to more than cover postage as packages in which goods are shipped weigh something, too. The overplus will be returned to you with invoice.



F. A. SALISBURY

1631 WEST GENESEE STREET
SYRACUSE, NEW YORK

LEWIS SECTIONS

HAVE

INDIVIDUALITY

BECAUSE they are in a class by themselves. They are not like other sections. Very rarely do they break in folding—in fact, one of our customers writes us that he has put up (folded) thirty thousand Lewis sections in a season and had not found one section in the whole lot that was not perfect. Beekeepers everywhere, no matter what their preference may be for hives or other bee equipment, agree when it comes to sections that Lewis sections are supreme. This is—

BECAUSE the material which goes into a LEWIS SECTION is of the right kind, especially selected for the purpose. The stock is assorted and re-sorted—the discolored stock thrown out, leaving only the whitest material to go into LEWIS SECTIONS.

BECAUSE the V groove, which is the most important process in the manufacture of a section, is made just right. In the LEWIS SECTION it is cut just deep enough so that the section will not break in folding. The LEWIS SECTION expert has been supervising the manufacture of LEWIS SECTIONS for over thirty years.

BECAUSE the finishing of the section is given the utmost care. The LEWIS SECTION is polished on both sides in a double-surfacing sanding machine designed in the Lewis plant especially for this purpose. It insures the uniform thickness of each and every section. The dovetailing of the ends is smooth, clean, and just right.

BECAUSE, even after LEWIS SECTIONS are completely manufactured, the packing is considered a very important part of the marketing. All LEWIS SECTIONS are put up in regular standard packages containing a good full count. A tight wooden box is used, entirely enclosing the contents so that no discoloration from air can occur, no matter how long the sections are carried in stock. The package is also strongly braced at all corners, insuring delivery to you in good order.

**AT THE SAME PRICE YOU PAY FOR OTHER
STANDARD MAKES OF SECTIONS YOU GET ALL
OF THE ABOVE WHEN YOU BUY LEWIS SECTIONS.**

Insist on Lewis Sections. Look for the Beeware Brand.

G. B. Lewis
Company



Watertown,
Wis.

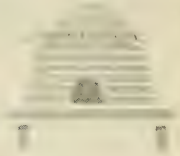
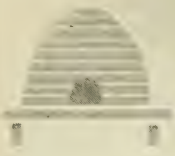
Order from your nearest distributor

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STILL

AUG 1912

Gleanings in Bee Culture



We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you spot cash for anything you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.

633 Central Bldg., Sixth and Main Sts.

Los Angeles, California

Telephones: Home 10419; Main 5606

BEEKEEPERS KEEP IN TOUCH WITH Leutzing & Lane, San Francisco, Cal.

236-238 Drumm Street

Buyers of EXTRACTED and COMB HONEY
Shippers and Exporters of HONEY

The WORLD is our market

Beeswax Wanted

In big and small shipments, to keep Buck's Weed-process foundation factory going. We have greatly increased the capacity of our plant for 1918. We are paying higher prices than ever for wax. . . We work wax for cash or on shares.

Root's Bee-supplies

Big stock, wholesale and retail. . . Big catalog free.

Carl F. Buck

The Comb-foundation Specialist

Augusta, Kansas

Established 1899

"Griggs Saves You Freight"

TOLEDO

How about Honey - cans, Honey - cases, etc.? We have a large and complete line of Root's Shipping-cases. No embargos at Toledo. All freight going out promptly.

Honey - Honey - Honey

We want 10 carloads of Extracted White and 10 cars Comb. How many can you furnish?

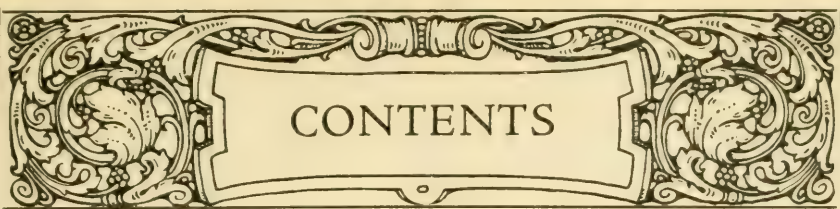
Queens

Golden and Leather Colored. Prompt delivery. Write us. Honey-extractors--big line. Send for free catalog.

S. J. GRIGGS & CO.,

Dept. No. 25 Toledo, Ohio

"Griggs Saves You Freight"



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SUBSCRIPTION RATES.—One year, \$1.00; two years, \$1.75; three years, \$2.50; five years, \$4.00. Canadian subscription, 15 cents additional per year, and foreign subscription, 30 cents additional. **DISCONTINUANCES.**—On and after March 1, 1917, all subscriptions, not paid in advance, or specifically ordered by the subscriber to be continued, will be stopped on expiration. No subscriber will be run into debt by us for this journal. **CHANGE OF ADDRESS.**—Give your old address as well as the new and write the name that appears on the paper. **REMITTANCE.**—Should be sent by postoffice money order, bank draft, express money order or check. **CONTRIBUTIONS** to GLEANINGS columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. **ADVERTISING RATES.**—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. **ADVERTISERS' RELIABILITY.**—The publishers use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly. Space occupied by reading matter in this issue, 77 per cent; advertising, 23 per cent.

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

E. R. ROOT	Editorial Staff	
Editor	A. I. ROOT	H. G. ROWE
	Editor Home Dept.	Managing Editor

READY MONEY FOR YOUR HONEY!!

SHIP NOW. If you have honey for sale, we want to buy it. Ten thousand producers in all parts of the world witness to the reliability of this house. No purchase too large or too small. We handle many carloads a year. Send us a sample and name your most reasonable price. We buy every time your price justifies.

PROMPT REMITTANCE. Remittance sent by return mail for every shipment we receive.

Honesty and integrity during the many years in the honey business have won for us the good will and confidence of thousands.

OLD COMBS AND CAPPINGS. Send them to us for rendering. We pay you the highest market price for beeswax, and charge you but 5c per pound for the wax rendered. It pays to send us your old combs and cappings.

WANTED, COMB HONEY. Comb and extracted Honey find ready sales here. Tell us what you have. We buy beeswax at high prices. Always glad to reply to inquiries.

WE SELL LEWIS BEEWARE. "Lewis," stands for the highest quality Beeware known. Safe and reliable, "Made like furniture." We are glad to fulfill your needs.

Our New Home

We are now located at Pearl and Walnut Streets, and are in the largest Honey House in the country. When you are in Cincinnati don't forget to call on us, for it will be a pleasure for us to show you our wonderful new home.

**DADANT'S FAM-
OUS FOUNDATION**

**ROOT'S SMOKERS
AND EXTRACTORS**

SEND FOR OUR 1918 BEE CATALOG

THE FRED W. MUTH CO.

PEARL & WALNUT STS.

CINCINNATI, OHIO

- Get that last drop of honey.
 - It's the maximum crop that is needed this year.
 - You can't afford to let your bees be crowded for lack of equipment.
 - We can ship goods to you promptly, and they are Root's Goods.
 - HONEY CONTAINERS. We are the Michigan agents for the Weis fibre honey containers. They are inexpensive, clean, and leak-proof. Send 15 cents in stamps for samples and prices.
 - HONEY WANTED.
-

M. H. HUNT & SON, Lansing, Michigan

HONEY WANTED

We are in the market at all times for unlimited quantities of honey, both comb and extracted. Before selling your crop let us hear from you, quoting your lowest price, either f. o. b. your station or delivered Cincinnati. - If extracted, mail sample, state how it is put up; if comb, state grade and how packed.

C. H. W. WEBER & COMPANY
CINCINNATI, OHIO

HONEY MARKETS

The honey market remains very strong and will continue so as long as the export demand keeps up as at present. The markets quoted below give the figures on which the honey-producer may calculate his own honey price.

U. S. Government Market Reports.

HONEY ARRIVALS SINCE JULY 1 AT IMPORTANT COMMERCIAL PORTS.

Medina, O.—38,340 lbs. Texas; 118,920 lbs. California.

Hamilton, Ill.—425 lbs. Iowa.

SHIPPING POINT INFORMATION.

Los Angeles, Cal. July 15.—Supply white orange about cleaned up, some holding for higher prices; supply alfalfa and sage increasing. Local demand and movement good, firm feeling for filling export orders. Cash to producer on farm; few sales. Best white orange 20-21c; some growers holding for 22c per lb., light amber and orange mostly 18-20c. Beeswax, mostly 34-36c per lb. (Unofficial.) Arizona and Imperial Valley, light amber, alfalfa, and sage, 16½-17½c, few 18c; dark amber 15½-16½c.

San Francisco, Cal., July 13.—Shipments light. Domestic demand light, export demand good, but uncertainty of dealers being granted export licenses and securing steamer space restricting movement. Latest estimates of alfalfa honey crop less than preliminary estimates. Cash to producers at country shipping points, extracted, white sage, 20-21c per lb.; light amber 17½-19c per lb.; alfalfa 18-18½c per lb.

Unofficial: Yakima, Wash., July 10.—Demand good, strong feeling. Cash to producer f. o. b. Yakima; comb, No. 1, mostly, \$4.80 per case; extracted, dandelion 14c per lb. Beeswax, 35c per lb.

TELEGRAPHIC REPORTS FROM TODAY'S MARKETS.

[The prices quoted in this report represent the prices at which the "wholesale carlot receivers" sell to the "jobbers." Arrivals include receipts during preceding two weeks. Prices represent current quotations.]

Kansas City.—Receipts very light. Demand limited, movement slow, firm feeling. Sales to jobbers, all sales in small lots. Native Missouri comb, quality and condition generally good, 24-section flat cases, No. 1, light, \$7.50. Beeswax, receipts very light. Buyers paying 35c per lb.

Minneapolis.—No arrivals. Supplies very light. Demand slow, steady feeling. Sales to jobbers, Minnesota and Wisconsin, comb honey, fancy white, old supplies practically exhausted. 24-section cases, \$5.50 to 6.00. Extracted, fancy white, 60-lb. pails, 21-23c per lb.

St. Paul.—No arrivals. Supplies practically exhausted. No sales reported.

Cincinnati.—2 California, 1,850 lbs. Kentucky arrived. Local demand light, good out of town inquiry, market firm, no sales reported. California white orange, jobbers asking 25½-26c per lb. Comb, practically no supplies, no sales reported. Beeswax, demand light, market weak. Average yellow, 40c per lb.

Chicago.—1 California, 1 Arizona arrived, both cars unbroken, light receipts from nearby States. All sales in small lots. New comb, best 28-30c per lb.; old extracted, 22c per lb. Beeswax, supplies liberal, demand slow, unsettled feeling, best 35-36c per lb.

Portland.—Sales direct to retailers, orange blossom, 60-lb. tins, 27c per lb., 2-gallon jackets, 29c per lb.

Denver.—Approximately 10,000 lbs. extracted and 50 cases comb arrived. Supplies light. Demand and movement good, firm feeling. Sales to jobbers, extracted light amber, 18c per lb., some fancy, 20-21c. Sales direct to retailers, white comb, quality and condition generally good, 24-section cases, \$6.00-6.50. Beeswax, receipts light, cash to producer 35c per lb.

New York, July 13.—Arrivals, 118 cases South America, 32 bbls. Cuba, 25 bbls. Porto Rico, incomplete. Receipts light. Demand good, market slightly stronger. Extracted, Porto Rican, \$2.35-2.50 per gallon. Very little Southern stock on market. Beeswax, arrivals, 15 bags Cuba, receipts

light. Supplies light. Demand good. Yellow, 12-14c per lb., mostly 12½c, dark 38-41½c.

St. Louis. No arrivals. Supplies exhausted. No sales.

Charles J. Brand,

Chief of Bureau of Markets.

Washington, D. C., July 15, 1918.

General Quotations of Wholesalers.

[These firms are asked to quote the wholesale prices they make to retailers. Accordingly their prices must be figured at least one profit higher than the price paid the producer. The large dealers do not quote prices in print that they will pay futurally to producers.]

NEW YORK.—From several leading honey dealers in New York City, we quote the following comment: "Eight hundred barrels of Cuban and Porto Rican were shipped to England (in early July), cleaning up this market; prices firm; demand good; no arrivals of comb honey; white extracted, (price to retailers) 25c; light amber, \$2.40 per gal."—"Market at this date (Jul. 16) is excited due to small spot lots on hand which bring price according to needs of buyers to help them out till large new crop lots arrive. Lots of Cuban and Porto Rican are being held for fancy prices, as well as other carload and less lots being sold by brokers for set prices only acceptable to exporting needs as out of reach for legitimate bottling limits; no definite market to quote on comb honey; white extracted (price to retailers) 22 to 25c; light amber 20c to 22c; amber, 18c to 20c."—"For shipping space to England, \$12.00 per hundred is demanded; import license needed for England; export restricted; Calif. orange (to retailers) 23½c; Texan, 17½c, f. o. b. Texas; Florida 18½ f. o. b. Florida; N. Y. State clover, 20c; no comb honey offered."—"Light amber extracted (to retailers) 21c."—"The market has shown a very much better feeling last week (Jul. 8 to 13) on account of shipments being made to England; there is a lively demand for Cuban, Haytian, and Porto Rican honey, and so honey in barrels is getting better prices; white extracted (to retailers) 25c; light amber 24½c; amber 24c; beeswax 42c."—"Very small demand for domestic consumption; stocks on hand (Jul. 5) few hundred barrels of Porto Rican and Haytian, some of Florida, no Cuban; market more active at present than past months, tho not as it used to be; white extracted selling at 25c."

CHICAGO.—Comb honey, extra fancy, 28c to 30c per lb. Extracted honey, white, (per lb.) 20c; light amber, in cans, 18c, according to color and flavor. Clean, average yellow beeswax, per lb., 35c to 38c.

R. A. Burnett & Co.

Chicago, Ill., July 17.

CLEVELAND.—There is practically no comb honey in our market. A few small lots have arrived from the South, but quality and condition unsatisfactory and no market price established. Fruit is high, and a limited quantity of nice white comb honey would bring good prices.

C. Chandler's Sons.

Cleveland, O., July 18.

SYRACUSE.—We have moved a little new honey at the following prices: Comb honey, extra fancy (per case) \$5.50. Extracted honey, white (per lb.), 23c.

E. B. Ross.

Syracuse, N. Y., July 17.

St. Louis.—Our market is rather quiet on both comb and extracted honey at present. Some Southern extracted and comb honey of the new crop is arriving, but present demand not sufficient to establish firm prices. Comb honey, extra fancy (per case), \$6.00; fancy \$5.50; No. 1, \$4.50; No. 2, \$4.00. Extracted honey, light amber, in cans, 18c; amber, dark, 15-16c; in barrels, 14c. Clean, average yellow beeswax, per lb., 40c.

R. Hartman Produce Co.

St. Louis, Mo., July 17.

PORTLAND.—There is very little new comb honey in market, as yet. Small lots of 5 or 10 cases only have been received for which 20c has been paid in some instances. No new extracted honey locally. Prospects good for fair crop of both. High prices and excessive freight rates inclined to

make market sluggish. No demand. Comb honey, fancy, per case, \$5.50; No. 1, \$5.00. Extracted honey, white, (per lb.), 20 to 21c; light amber, in cans, 17 to 18c; amber, in cans, 15 to 16c.

Pacific Honey Co.

Portland, Ore., July 12.

DENVER.—Season late; not much honey in sight yet; crop prospects fair; very little honey ready for market. Comb honey, No. 1, white, per case, \$6.50; No. 2, white, \$6.00. Extracted honey, white (per lb.), 23c; light amber, in 60-lb. cans, 22c. Clean, average yellow beeswax, per lb., 35c cash; 37c trade.

The Colorado Honey Producers' Association.

Denver, Col., July 18.

KANSAS CITY.—No honey of any kind on the market. Local beekeepers forecast poor crop around here. Clean, average yellow beeswax per lb., 35c.

C. C. Clemons Produce Co.

Kansas City, Mo., July 17.

PHILADELPHIA.—Have no quotations to offer at this time; a few inquiries but no receipts of this season's goods at present.

Chas. Munder.

Philadelphia, Pa., July 17.

BUFFALO.—No honey, either comb or strained, offering on this market. Seems to be very scarce. Shippers could obtain their own price for any they might offer.

Gleason & Lansing.

Buffalo, N. Y., July 16.

MONTREAL.—Very little old honey on the market at present. No new on this year's crop yet. Comb honey, extra fancy, per lb., 25c; fancy, 24c; No. 1, 23c; No. 2, 20c. Extracted honey, white, (per lb.) 21c light amber, in cans, 19c, in barrels, 18½c, amber, in cans, 18c, in barrels, 17c.

Gunn, Langlois & Co., Ltd.

MEDINA.—At this date, July 22, we are unable to speak with confidence an opinion of the honey market, and because of the prevailing uncertainty, we are making very few contracts for future delivery. For spot shipment, our range of prices since last quoted has been as follows: Water white honey, 21c; white, 20c; light amber, 18c; amber, 15 to 17c. Comb honey: no shipments on which to base a quotation.

The A. I. Root Co.

TRADE NOTES

ADVANCED PRICES.

We announce another general advance in prices in beekeeping supplies effective at once. Revised schedules are being prepared and will be mailed as soon as they are in print to interested parties who apply. This further advance is made necessary by still further sharp advances in price of lumber and other material used, as well as wages to labor to care for increased living cost.

BARGAINS IN COMB HONEY SHIPPING CASES.

We have numerous bargains to offer in comb-honey shipping cases to those who need such containers. Have various styles of used cases, nailed up and in excellent condition; also some 12-lb. cases of several sizes. Some of these are available at our branch offices. If you will write, giving the size of sections you need cases for, we will advise what we have to offer to fit them.

The A. I. Root Co.

Special Notices by A. I. Root

ELECTRIC AUTOMOBILES: WHERE CAN THEY BE PROCURED?

At the close of the Home Paper in this issue I state that my electric automobile cost only \$300. It was made originally by the Baker R. and L. Co., Cleveland, O. I think the machine when new cost \$1,500 or \$1,800. But this second-hand machine was gone all over and put in good repair, and nicely varnished up, for only \$300, but with no guarantee in regard to the batteries, as I have explained.

Queens of Quality

Select three-hand Italians; bred for business. Untested, \$1.00 each; six for \$5.00; \$9.00 per dozen. Circular free.

J. I. Banks, Dowlstown, Tennessee

WANTED TO BUY HONEY

Quote Prices and Quantity for Sale

STULZ BROS., Kansas City, Mo.
2043 Main Street

WANTED SECTION HONEY

in Carlots and less than Carlots. . . .

Correspondence Solicited

J. E. Harris
Morristown, Tennessee

Honey Cans

(Several Carloads now on hand)

Superior Foundation Honey Extractors

Everything in Bee Supplies

For Quick Shipments
order from

Superior Honey Company

Ogden, Utah

Branch at Idaho Falls, Idaho

Shipping Cases Needed?

IF so we can furnish them at Syracuse, N. Y., also boxes of 2-60 lb. cans. Up to July 10th the weather has been cold but when the weather was warm the bees brought in considerable honey. We presume you have secured your share and will need cases and containers. Better send in an order right away to be able to have them on hand when wanted.



F. A. SALISBURY

1631 WEST GENESEE STREET
SYRACUSE, NEW YORK

NEW BINGHAM BEE SMOKER



In 1878 the original direct draft bee smoker was invented and patented by Mr. T. C. Bingham, of Michigan. Mr. Bingham manufactured the Bingham Smoker and Bingham Honey knife for nearly thirty-five years; and in 1912, becoming a very old man, we purchased this business and joined it to our established business of beekeepers' supplies and general bee-

ware. Those who knew Mr. Bingham will join us in saying that he was one of the finest of men and it gives us much pleasure to help perpetuate his name in the beekeeping industry. Bingham smokers have been improved from time to time, are now the finest on the market, and for nearly forty years have been the standard in this and many foreign countries. For sale by all dealers in bee supplies or direct from the manufacturers.



THUMB REST

	Size of Stove	Weight	Retail
Smoke Engine	4 x 7 inch	2 1/4 lbs.	\$1.25
Doctor	3 1/2 x 7 inch	2 lbs.	1.00
Two above in copper, extra each.			.50
Conqueror	3 x 7 inch	1 3/4 lbs.	.85
Little Wonder	3 x 5 1/2 inch	1 1/4 lbs.	.65

Bingham Honey Uncapping Knives with New Cold Handles

We are furnishing the same quality steel, best money can buy, thin-bladed knives that Mr. Bingham manufactured years ago. The old timers all remember these knives and many are writing in as Mr. Volstad in the following letters. The substitutes offered

by others have not given the satisfaction desired.

A. G. Woodman Co. Lyle, Minn., June 21, 1917.
Gentlemen:—Have you the thin good-working uncapping-knives we used to get about 20 years ago, and that worked to perfection?

We sent an 8 1/2 and 10 inch knife and received the following letter:
A. G. Woodman Co. Lyle, Minn., July 5, 1917.

Gentlemen:—Knives received; glad you sent them at once. They are just what I want and have been looking for but did not know where to get them. K. H. VOLSTAD.

Many of the most extensive honey producers insist on the Genuine Bingham knives. Mr. N. E. France of Plattsville, Wis., gave us a fine unsolicited testimonial on the steam-heated Bingham knife, too long for this space.

	Weight	Price
8 1/2 inch blades.	12 oz.	\$.90 each
10 inch blades.	14 oz.	1.00 each
10 inch blades, steam heated with tubing.	20 oz.	3.00 each
Steam Generator, with safety valve.	40 oz.	2.00 each
Double burner oil lamp stove.	7 lbs.	2.75
Postage extra.		

TIN HONEY PACKAGES

YOU WILL MAKE A MISTAKE if you do not ask for our LOW PRICES on Friction Top Pails and Cans. We are SAVING MONEY for carload buyers and others of smaller lots, why not you? ? Our three-year contract is enabling us to make prices a considerable under general market quotations. Let us hear from you, specifying your wants.

A. G. WOODMAN COMPANY,
Grand Rapids, Mich.

LEWIS SECTIONS

HAVE

INDIVIDUALITY

BECAUSE they are in a class by themselves. They are not like other sections. Very rarely do they break in folding—in fact, one of our customers writes us that he has put up (folded) thirty thousand Lewis sections in a season and had not found one section in the whole lot that was not perfect. Beekeepers everywhere, no matter what their preference may be for hives or other bee equipment, agree when it comes to sections that Lewis sections are supreme. This is—

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BECAUSE the V groove, which is the most important process in the manufacture of a section, is made just right. In the LEWIS SECTION it is cut just deep enough so that the section will not break in folding. The LEWIS SECTION expert has been supervising the manufacture of LEWIS SECTIONS for over thirty years.

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STANDARD MAKES OF SECTIONS YOU GET ALL
OF THE ABOVE WHEN YOU BUY LEWIS SECTIONS.**

Insist on Lewis Sections. Look for the Beeware Brand.

G. B. Lewis
Company



Watertown,
Wis.

Order from your nearest distributor.

GLEANINGS IN BEE CULTURE

AUGUST, 1918



EDITORIAL

THE BEEKEEPERS of the United States are going to be allowed all the sugar necessary to feed their bees—if the sugar is in any way obtainable. This is the definite and emphatic statement the Sugar Division of the U. S. Food Administration made as late as July 20.



**Beekeepers
Will Be
Allowed the
Sugar Needed.**

**Bees—if the sugar
is in any way ob-
tainable. This is
the definite and
emphatic state-**

ment the Sugar Division of the U. S. Food Administration made as late as July 20.

Many of our readers, after seeing our editorial on page 394, July issue, entitled "Don't Extract too Closely," referring to the probable sugar shortage, were very greatly alarmed. The further statement, that Dr. Phillips would probably advise the Sugar Division to put restrictions upon sugar for beekeepers, caused quite general alarm—even panic—among honey-producers. Beekeepers were confused as to the whole sugar situation. Accordingly the Editor of Gleanings decided he could not do anything better for the beekeeping industry than to go to Washington, see Dr. Phillips and the Sugar Division of the United States Food Administration, and try to get a definite decision in favor of the beekeeper. So we did this.

As a result, we are very happy to inform our readers that the situation is not nearly so bad as it looked at the time of our last issue.

Our readers may not generally know that in the Government's Official Bulletin for June 24, the Food Administration gave notice that "honey manufacture" would be placed in "the less essential class" of production, and so would be allowed only 50 per cent of its normal sugar requirements. Some high authorities held that "honey manufacture" meant honey production by the beekeeper. But this view of the ruling is not correct, as the Editor of Gleanings learned definitely while in Washington.

The term "honey manufacture" did not refer to feeding sugar to bees. It meant only sugar for adulterating (mixing or compounding with) honey; and hence the term "honey manufacture" was used. Mr. Wilson of the Sugar Division in charge of the distribution of food stated to us positively that there never had been any desire on the part of the Government to shut off needed sugar for feeding bees, and no such action whatever is now intended. Fortunately, Mr. Wilson's brother is an enthusi-

astic beekeeper, and he himself fully realizes that sugar under some conditions is of vital necessity for the beekeeping industry. "But," said he, "the available amount in sight is not only less than it was at this time last year, but we may have to go further if the shortage becomes more acute, and allow only half the amount to individuals and to industries."

How are the beekeepers to get sugar? All that is necessary, said Mr. Wilson, for every beekeeper who really needs sugar and must have it, is to write a letter to the United States Food Administration, Sugar Division, at the capital of his own State. This letter must be plain, concise, and, as a matter of fact, should state actual needs, the number of colonies, and the amount required per colony. The State Administration issues a permit which allows the beekeepers to go to any dealer or wholesaler who has a supply of sugar, and get from that dealer the amount of sugar called for.

Right here let us say that the beekeeper must not get the idea that the permit alone will solve the sugar problem. It solves it only so far as the Government can solve it for him. If the dealer does not have the sugar he can not supply it, of course, and there is great danger that the dealer may not always have it. The beekeeper must be alert in seeking it from whatever source is within his reach.

Perhaps it is not necessary to remind the reader that the statement setting forth the need of sugar must be based on actual facts. Any other kind of statement, whether made in the form of an affidavit or not, may make the beekeeper grave trouble; for it must be remembered that the United States Food Administration has almost unlimited authority for punishing misrepresentation or a violation of its rulings.

A word in regard to the attitude of Dr. Phillips in suggesting a reasonable restriction on sugar for beekeepers. He has been a most faithful and untiring worker in the Bureau of Entomology. He has done a great many things for bee culture that will have a far-reaching influence on the business. He is not only loyal to the interests of beekeepers, but he is intensely loyal to the cause of our allies. He says that our dear Uncle Sam has granted everything that the beekeepers have asked of him, and that beekeepers now should be very careful not

(Continued on page 461.)

IT MAY NOT be generally known, but milkweed, that was formerly supposed to be a pest to bees, is a very important source of honey production in central and northern Michigan. In quantity it ranks, where it grows, with raspberry and clover; and in quality it is nearly the equal of either. It was formerly supposed to be destructive to bees on account of the little pollen appendages that stick to the bee's legs. These do little or no harm, as these appendages are pulled off by other bees.



DR. E. F. PHILLIPS, of the Bureau of Entomology, Washington, D. C., says that he

Shall Beekeepers Be Relieved of the Draft.

formerly received requests from beekeepers over the country, urging him to use his influence to the end that they be relieved from the draft or placed in deferred classification on the ground that they were producing food, namely, honey. He takes the position that if the local draft boards have not seen fit to put beekeepers in deferred classification, he certainly will not lift a finger to do so. He feels that it would be unpatriotic for him to do it, and he is absolutely right. He does feel, however, that local draft boards should have the same consideration for beekeepers as for other food-producers—no more, no less.



ON SATURDAY NIGHT, June 22, the thermometer was down to 45 at Medina with every indication



Honey Flows at Low Temperatures.

that there would be a frost. On Sunday morning the mercury rose to 55 in the shade. The sun came out bright, however, but there was a cold north wind; and even up to 2 o'clock in the afternoon the mercury did not go higher than 62. In going out to the apiary we noticed an unusual furore among the bees and thought it was robbing. We concluded it might be playspells, and went back to the house, for it was too cold to be comfortable outside. We had turned on the steam heat the night before, and the radiation was almost equal to what it usually is in winter, and yet we were not uncomfortably warm in the house. Going out into the yard again we noticed such a roar of bees that we thought it must surely be robbing, as we could not conceive of clover yielding nectar when the temperature was so low.

A careful examination showed that the bees were unquestionably getting something somewhere. Searching the yard we found the bees were going over the buildings. Could it be possible the bees were gathering real nectar at such a low temperature, and doing it with such excitement. The roar

and high keynote were like those of robbing. The bees seemed to be almost in a frenzy. We finally examined a clover field and found the bees dotted here and there on the heads of clover, indicating a flow. The mercury still dropped, but yet the roar of bees continued.

About two weeks prior to this, clover had just started. The temperature was high, but there was no nectar. Occasionally there would be a day when for a few hours the bees worked a little on clover; but they worked only at intervals, and the yard had to be fed to keep it from starvation. On Saturday, the 22d, it was quite cold. On the Friday previous, there was a heavy downpour of rain with a furious blow of wind. The ground was literally soaked. The following day (Saturday) was cold, and no activity was noticed among the bees. The boys put on feeders, fearing that brood-rearing would be checked.

We can not account for this flow of nectar at so low a temperature on Sunday except on the ground that clover had had a rest for a week. It was too dry, too cold, or something else; but when the heavy downpour of rain came on, it must have given the nectar in the clover blossoms a boost, with the result that, in spite of the cold, the steam heat, and the overcoats of the owners of the bees, there was a large amount of nectar. On examining the clover blossoms we were surprised to find so much nectar—so much, indeed, that the bees worked more like robbers than quiet workers on clover.

Our Mr. Thompson, lately from the West Indies, reports that the heavy flow from logwood comes in January and February. At that time of the year the temperature occasionally goes quite low; yet he reports that sometimes there are heavy flows, and the temperature down to 60.

In view of the evidence presented, we shall have to conclude that there are exceptions to all rules. We have become so in the habit of thinking that hot muggy weather is a necessary condition for a honey flow that we have ceased to think of any activity on the part of the bees when the mercury is down to 50 and 60 Fahrenheit.



MANY BEEKEEPERS have said this season that if they had had more bees they



Buy Bees in the Fall.

could have secured proportionally more honey. They could not buy bees last spring in the South nor elsewhere. The man who has a prospect or a possibility of getting \$10 or \$20 worth of honey per colony is not disposed to sell his bees for \$5 or \$6 before the honey flow, and the other fellow is not willing to pay more on the chance. But after the season is over, and especially if the season has been a failure, Mr. Man will be glad to sell his bees, and sell cheap. If he has no prospect of a fall

flow, and if he fears that he can not get sugar to feed or has not the means to buy sugar, he will be very glad to sell to the other fellow who has a good crop, and who will have a reserve of combs to give to colonies that he can purchase at a fair price. The seller and the buyer will both be benefited.

The difficulty of getting bees last spring, with the probability that the South will not be able to supply the demand next spring, emphasizes the importance of getting bees now when they can be secured at moderate prices. Where one has a good cellar, or uses modern methods of packing bees, he can afford to pay a fair price; and the other fellow, if he did not get any crop, and especially if he has "got the blues," can afford to sell at a very reasonable figure, and will be glad to do so.

Gleanings wishes to suggest that the buyer and seller can get together (if impossible by other means) thru the advertising columns of the various bee journals.



IN THE LAST ISSUE we discussed a few of the chief sources of sweets to which the



**Where We
Get the Sweets
We Eat.**

American people are addicted, and we pointed out that the free use of these is injurious.

Fortunately there are forms of sugar that are of better value for human consumption.

In the United States there are probably five million acres planted to apple trees, more than the acreage of all other fruits combined. The State of Missouri has over 14 million apple trees, while our own State of Ohio, which is in the region of corn and hogs, has over eight million. Add to these enormous figures the crops of peaches, plums, pears, cherries, berries, and citrus fruits, and it will be seen that the American people do get great quantities of natural sugars, in such form that they may be digested and assimilated readily. In addition to fruit sugars these foods furnish nourishment of other types, including the highly important fruit acids.

It is more than a coincidence that there is a close relationship between fruit growing and honey production. Without the bee there would be a much smaller fruit crop than is now gathered, and, in all probability, the bee does more good to the fruit-grower in pollinating his fruit than the good that the beekeeper gets from the honey crop. The honeybee is, therefore, a great producer of sugar, and all of it is natural sugar. The amount of fruit sugar produced and used in the United States cannot even be estimated, but there are great quantities of sugar in the 100 million dollars' worth of apples which the United States produces in the average year.

Some of the fruits contain so much sugar that it is useless to add any cane or beet

sugar in preserving them. For example, when prunes were unusually cheap a few years ago in California, it was seriously proposed to manufacture sugar from them. Grapes are made into raisins without the addition of sugar. There is also a great amount of sugar in the date and the fig, both of which are being raised in the United States in increasing quantity.

The maple sugar industry was formerly an important one in parts of the country, and northern Ohio did not take a back seat to any other part in this industry. The amount of maple sugar produced is small, yet it is about half that of the honey production of the country. But honey production may be increased, while the maple sugar industry is decreasing. There has been a movement on foot this year to increase the production of maple products on account of the sugar shortage, but this has taken the form of advising the tapping of trees that are usually neglected, and it is not seriously proposed to plant any more sugar maples.

Maple sugar is sucrose like cane and beet sugar. It, however, has the advantage that it contains mineral salts and other products, making it a more natural sweet than its more popular rivals.

In closing the discussion of the rivals of honey we cannot fail to mention the ways in which honey surpasses all of these sweets. It is a predigested sweet, putting no tax at all on the digestion of those who eat it. It gives up its energy as quickly as any other form of sugar, and at the same time it furnishes a small amount of protein, considerable mineral salts, and, above all, it contains vitamins, the products found in some foods in minute quantities which further the processes of growth. What more could we desire in food? It is an energy food and is not taken primarily for its body-building properties. Yet it puts no unnatural strain on the digestion, it has a flavor we all know surpasses that of any other sweet, it has properties which make it desirable for use in baking, and it does have some body-building value.

The beekeeper ought to remember these things when talking up his market. He has no reason not to be proud of his product. There is no talking point about any form of sugar which he cannot truthfully use about his product. Then, too, his is an industry which uses no land useful for other agricultural purposes; he does not take a valuable food like corn and make it into a poor food like glucose. His product in its making does not deplete the soil.

With all of these facts at his command—and all of them are facts and not fancy—the beekeeper ought to be the best salesman on earth. What more could he ask than a product like this to sell? Now that the demand for honey is so great on account of the sugar shortage, the beekeeper ought to take advantage of the opportunity presented to talk up honey so that when the war is

over the consumer will not go back to his bad habits of excessive sugar eating but will continue the use of honey.

The beekeeper ought also to talk the use of fruit as a source of sugar, not because it does his business any good but because it will help the health of those about him. We ought all to be missionaries of health and to do all we can to reduce the sugar debauch of the American people. The beekeeper who is also a fruit-grower has the advantage over his fellow beekeeper who grows no fruit. These two branches of farming go well together and they make the greatest sugar combination on earth!



WE PROMISED in our last issue to show illustrations of a form of shipping cage



Pound Packages of Bees for Parcel Post.

made wholly of wood that would be accepted by the postal authorities. We have not yet accepted the design that will be cheap enough to put on the market; but in our next issue we hope to show something made entirely of wood that will eliminate wire cloth and which will deliver bees by mail long distances with the loss of hardly a bee. The cage is not patented, and any one can make it provided he has suitable machinery for it.

In a general way, it is nothing more nor less than a box made of $\frac{3}{8}$ -inch basswood and of a suitable size and shape to hold one, two, or three pounds of bees. To provide ventilation, saw-cuts $\frac{1}{8}$ inch wide and $\frac{3}{4}$ inch apart, and reaching to within half an inch of the corners, are made in the sides, ends, top, and bottom. This idea came from E. J. Ashley of California, and is a good one.

The difficulty encountered was in making a cage that would be cheap enough and, at the same time, strong enough to stand the shocks and bangs received in the mails; but we feel confident that we shall be able to present a cage idea in our next issue that will fill the bill.

In this connection, we can not make it too emphatic that shippers should not attempt to send bees in poorly designed cages. One bad shipment, or a few bad ones, might be the means of revoking the privilege entirely. It would be well, therefore, for prospective shippers to wait until we can present a form of cage that will be suitable and which the United States postal authorities have favorably passed on.



WHILE VISITING J. N. Harris of St. Louis, Mich., one of the best beekeepers in



A New Kink of the Trade.

that State, he gave us an idea that looks good. Altho he has a modern power extracting outfit, and can extract his combs as clean as any one, he says it pays,

and pays well, to extract his combs a second time, about five or six weeks after the first extracting. In the mean time the combs after the first extracting gather a slight amount of moisture—just enough to make the residue flow again. When the combs are put back in the machine and given another whirl a considerable amount of honey will be secured—enough to pay for the time and trouble several times over, said Mr. Harris. The work can be done at a time when it is most convenient to the beekeeper, when the weather is bad outside. Of course, it goes without saying, that the extracting-room should be warm, and it usually will be in August or early September.

This is a seasonable idea that during war times may be productive of much good. It may not work in all localities and with all kinds of honey; but if one can increase his honey crop by even a small percentage by a second extracting during these strenuous war times, he should do it.

Mr. Harris works on the plan that most beekeepers do—extracts after the crop has been secured, and this requires a complete set of combs. After the extracting the combs are stored in supers in the extracting-house, and allowed to stand four or five weeks, when they are extracted again. In that case the supers would have to be staggered to let in air or moisture.

When wet extracting combs are put back on the hives it has been the belief that the honey is saved. On this point there has been much doubt. Some of our best beekeepers hold that such honey is wasted by the bees gorging (overeating). If this is true, the honey is lost. The Harris plan will save it for a starving world.



MOST OF the honey-producers of the country who have produced comb honey in former years, are now



The Production of Comb Honey Eliminated.

producing extracted, and some of them are saying that even after the war is over they will never go back again to the production of comb honey. The amount of it that will be produced this season will be very small, and the production will be mainly from the small beekeepers who sell in their own local market.

There is no doubt there will be a big demand for comb honey in the big markets this fall which cannot be supplied. The exigencies of the war and the high price of extracted honey (even higher than comb honey in many cases) has made it a patriotic duty for every beekeeper to produce as much extracted as possible, to say nothing of the fact that he can produce a pound of extracted at about half the cost he could produce a pound of comb honey. Some of the largest producers in the Middle West have told the Editor that they could handle

twice as many colonies for the production of extracted as they could for comb, and that after the war is over comb honey will have to bring two or three times the price of extracted before they will go back to section honey. It will probably take some years before comb honey will get back to its own, even if it ever does. The big supply factories have, for the time being, discontinued the manufacture of section-honey boxes, and are running their factories mainly for the production of hives and frames for extracted.

We can not help feeling, however, that an effort should be made to reinstate the comb-honey business, after the war is over, because there is a very large consuming trade that recognizes the superior quality of honey in the comb, and it has an advertising value in the honey business that is valuable. It looks so good (and tastes so good), don't you know?



IN SOME STATES, sweet clover is classed as a noxious weed, and the township road supervisors are ordered to cut it just before it comes in to bloom. In other cases municipalities



**Sweet Clover
and
Town Councils.**

have passed special ordinances requiring the road commissioner to put it in the noxious weed class. The result is that a most valuable forage plant for bees and stock is cut down while the worst kinds of weeds are allowed to grow freely everywhere. Time, time and again, along the roadsides we have seen sweet clover cut down while burdock, Canada thistle, and other noxious weeds are allowed to grow.

Several of the States, including Ohio, have repealed that section of the noxious weed laws that includes sweet clover, not because beekeepers have asked for the repeal, but because farmers and experiment stations have shown that for farmers the plant is one of the most valuable forage plants ever known.

It appears that sweet clover had been placed under the ban at Huntington, Ind., by the town council. W. D. Keyes appeared before that body about a year ago, explaining the value of the plant with the result that the council repealed that portion of the ordinance requiring sweet clover to be cut by the street commissioners. Where ordinances like this are in effect we suggest that other beekeepers follow Mr. Keyes' example.

Wherever sweet clover is classed as a noxious weed, beekeepers should unite with the farmers in putting a petition before the state legislature and ask for the repeal of the section of the law that includes sweet clover. All it needs is a little pressure brought to bear. Some one must make the start, and beekeepers should take the initiative, if no one else does.

Beekeepers Will Be Allowed Sugar Needed.

(Continued from page 457.)

to abuse their privileges by asking for sugar in unlimited quantities, especially since our allies have only a very small percentage of the sugar we have. Dr. Phillips believes it is the patriotic duty of every beekeeper to get along without sugar if he can. The man who can afford to do without, says Dr. Phillips, is the one who has secured a good crop of honey in a locality where there is no bee disease; and in speaking of bee disease, he says the beekeepers whose bees have it, should of course have sugar, as they can not feed honey.

Furthermore, Dr. Phillips believes that the beekeeper who has secured a small crop of honey—25 pounds we will say—and who sells it at 20 cents, and replaces it with nine-cent sugar, is profiteering. On this point we can not agree with Dr. Phillips. If that man is profiteering, then the man who sells his whole crop of, we will say, 50,000 pounds for 20 cents a pound is profiteering. In a sense, high prices of any kind are robbing our allies in Europe at a time when their war chests have been drained dry, and at a time, too, when they are struggling for bare existence. Dr. Phillips' view is that if we have any red blood in us—any sense of fairness—we ought to make the burden on our allies as light as possible. Good and all right.

But for the beekeeper who has had very indifferent success this season, harvesting very little honey and needing all the funds possible (and there are many such), we believe there is another justifiable angle from which to view the selling of his even limited supply of honey. A pound of honey extracted and placed on the market replaces for human consumption fully a pound of sugar. A pound of sugar (purchased by the beekeeper at one-half the price he could obtain for his honey) replaces for bee consumption fully a pound of honey. Isn't it merely a question, then, of whether the beekeeper (not generally rich) should stand a high-priced food for his bees, or whether the man abundantly able and wishing to buy honey should not be permitted to spend his money for a high-priced substitute for sugar? In other words, shall the beekeeper or the man ready to purchase a high-priced sweet, stand the high cost of feeding the bees the coming winter?

Later.

Confirming what has been said above as to beekeepers being allowed all the sugar necessary for feeding, there has just come to hand (July 22) the official "Food Conservation Notes," issued by the U. S. Government under date of July 6. In this official statement "bee culture" is specifically mentioned as one of the industries that "are now given 100 per cent of their sugar requirements." This is only further official assurance that the Sugar Division expects beekeepers to be allowed the sugar they need.

ONE of our favorite amusements at the close of the honey flow is that of checking up the amount of surplus honey each colony has

produced, then figuring how much our crop would have been, if all colonies had done as well as the few best ones. Those who have never indulged in this pastime can have no idea how fascinating it is, for the figures sometimes give a theoretical honey crop that almost staggers the imagination. Long before we were married my husband had annually built air castles out of that difference between what the bees actually did and what they might have done. After many years (more than he cares to admit) he says he has greatly profited by the air-castle business, because it has led him to look for the reasons for the difference in yields of colonies in the same apiary, and to correct some of the deficiencies which cause a lower yield.

At the time I came into the firm he was considerably puffed up over his accomplishments along two lines, uniformity in the strength of the colonies at the beginning of the honey flow and uniformity in the strain of bees, all, or nearly all, queens being from the same mother and of the same age. However, in spite of this uniformity along these two lines, the yield per colony continued to vary tremendously.

Of course, we all know that one reason for the difference in yield is that some colonies are thrown out of condition during the honey flow by preparations for swarming, lack of room for storing and ripening the incoming nectar, some accident to the queen, or some other cause or combination of causes. We know that beekeepers have made wonderful progress along the line of coaxing the bees thru the honey flow, without any loafing. (But that is another story concerning which I hope to say something later.)

During recent years we have been unable to requeen systematically or to equalize the colonies previous to the honey flow, as was our previous practice. However, we now secure nearly the same degree of uniformity in the strength of colonies at the beginning of the honey flow as we did by the other more laborious method, and are doing it by the more logical method of removing the factors that cause the weaklings rather than curing the trouble by equalizing in the spring. We now sometimes think that the time is not far distant when beekeepers will be able to attain a uniformity in per-colony output approaching the long-dreamed-of goal of every colony yielding as much as the best ones.

Critical Periods in Colony Existence and Prosperity.

There are certain critical periods in brood-

BEEs FOR THE WINTER CLUSTER

The First Step in Preparing the Colonies for Next Year's Honey Flow Should be Taken Now

By Belva M. Demuth

the cause of their death. At other times colonies may be short of stores, cramped for room, have inadequate protection against the cold and wind, or even be queenless for a considerable period of time without any real danger to their existence or prosperity. But during these critical periods any deficiency in the needs of the colony which affect brood-rearing adversely, is extremely dangerous. For instance, it is not dangerous to the existence of the colony to have no brood-rearing during a considerable period of time in July or early in August. If this occurs, however, during the latter part of August and early in September in the clover region, the colony is practically worthless for winter. This is one big reason for the great difference in the strength of colonies at the beginning of the honey flow. Only those colonies having no deficiencies in their needs during the various critical periods come up to the honey flow in prime condition.

These critical periods in colony existence and prosperity are so important that I think the bee journals should, each year, point them out, as they occur in the various parts of the country, for the benefit of those beekeepers who may not fully realize their importance.

The Critical Period of August-September.

The beekeeper's calendar should begin in August. This is why I am writing this now, for, in the clover region, the first of these critical periods comes some time in August and early September. At this time is laid the first course in the foundation for next year's honey crop, namely, the production of the bees that form the winter colony. The worker bees in our hives the fore part of August are not the ones that will form the winter cluster, for most of them will be dead before cold weather. If there is an absolute dearth of nectar, these workers may so save their energy that they will live several months but they cannot, so far as we know, live thru the winter. Therefore, if we are to have colonies composed of bees whose lives can span the broodless period of winter, they must be reared some time after the first of August.

When there is a dearth of nectar during this period (which is usually the case), brood-rearing is almost entirely suspended in colonies having old queens, even tho they have an abundance of stores, as well as in colonies that do not have an abundance of stores, even tho they may have young queens. With both young queens and an abundance of stores, however, a sufficient number

rearing thruout the year during which any deficiency in the needs of the colonies may affect tremendously their future prosperity, or, perhaps, even be

of young bees are reared for winter even during a severe dearth of nectar. Queens reared in May or June are not nearly so active in egg-laying during the following August and early September as are those reared in August. If we could have our way about it, we would have our young queens begin to lay just in time to produce the workers for the winter colony or about the middle of August. The influence of an abundance of stores upon brood-rearing during a dearth of nectar is well known among beekeepers, yet probably no defect in beekeeping practice causes as much annual loss as that of taking the lion's share of the honey and leaving too little for the bees, thus compelling them to live from hand to mouth during the critical periods of brood-rearing.

Another condition, which is sometimes encountered, is that of just enough nectar available this month to tease the bees along and wear them out prematurely with scarcely enough brood-rearing to replace the wastage of bee life. Under such conditions the colonies grow weaker every day and begin the winter with small clusters. We know of no remedy for this condition except to move the yard to a location where it seldom occurs. An absolute dearth of nectar is preferable to this condition. A good fall flow, which enables the bees to store a surplus in August, puts the colonies in fine condition for winter as far as young bees are concerned. The very best wintering usually follows after an August honey flow. We

envy those who are so favorably located as to have every year a good honey flow in August.

It is comforting to know that under any of these conditions the very best thing the beekeeper can do for the welfare of his colonies is to see this month that each colony has the following conditions existing: (1) A young and vigorous queen together with enough workers to be called a colony. (2) An abundance of stores far in excess of the immediate needs of the colony. (3) Room for both this excess of stores and brood-rearing. When these conditions are present during the four or five weeks following about the middle of August in our locality, we may confidently expect to have a colony in good condition for winter.

Much of the so-called winter losses are not winter losses at all but August-September losses. The fact, that colonies which were not supplied with the above three requirements during this critical period do not die until winter, can in no way justify calling it a winter loss. We do not expect to lose during winter colonies that were supplied with these requirements at the right time, and given half a chance to save their energy during the cold weather. In the clover region any deficiencies in these requirements must be supplied in August.

Beekeepers who desire to have all colonies do as well as the best next year must begin now. September is too late to retrieve a situation lost this month.



THE introducing cage shown in

Fig. 1, d, was tried out in the Medina home yard last season. Altho virgins as well as laying queens were introduced, every single queen was accepted.

For constructing the cage, procure two blocks $\frac{1}{4} \times \frac{3}{8} \times 1\frac{3}{4}$ inches, and one $\frac{1}{4} \times \frac{3}{8} \times 1$ inch. Place the two longer blocks $\frac{3}{8}$ of an inch apart, and the shorter block $\frac{3}{8}$ of an inch from one of the longer ones, having one end of each of these blocks right in line with each other. Next take rectangular pieces of tin $1\frac{3}{4} \times 1\frac{1}{2}$ inches, from each of which a corner $\frac{7}{8} \times \frac{5}{8}$ inch has been removed. Nail one of these L-shaped tins thru the $\frac{1}{4}$ -inch edges of the blocks, invert and then nail the other tin on the opposite side of the blocks, thus leaving two passageways into the cage, the opening of each passage being $\frac{3}{8} \times \frac{3}{8}$ inch in cross section. Next nail a strip of perforated zinc over the shorter passage on the inner end as shown in the cut (1,e). Wrap and tack with wire cloth, as shown in the illustration, and in-

CAGES OF UNUSUAL MERIT

Device Whereby the Queen is Fully Accepted by the Bees Before Being Liberated

By J. E. Thompson

sert a $\frac{3}{8} \times 1\frac{1}{2} \times 3$ -inch block in the opposite end of the wire cloth.

To introduce the queen, fill the passages or entrances with candy, remove

the large block and put in the queen, with or without bees. If bees are placed with her, they should be only the young ones. If the colony is weak, care will need to be taken that the queen be kept sufficiently warm; and the cage should, therefore, be hung perpendicularly between the frames and brood, after killing the old queen. If the colony is strong, place the cage horizontally between the top bars of the frames so that the cage will not extend over the brood, for if the cage is placed so near the brood that no bee-space intervenes between the brood and the cage, the bees will destroy the brood. In case of a weak colony, it may be necessary to sacrifice a little brood in this way, in order to insure the queen having plenty of warmth, but in strong colonies I always place the cage horizontally. The queen will leave the cage in from 2 to 3 days, but should not be disturbed for as

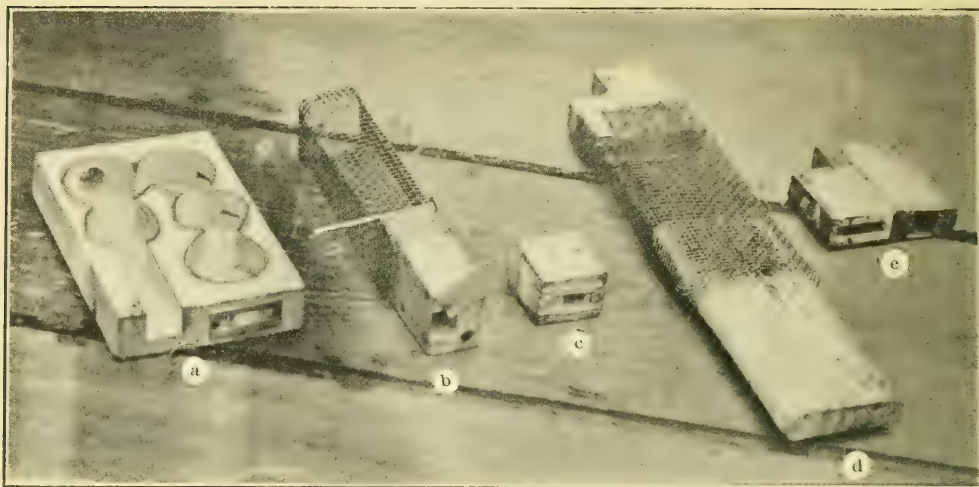


Fig. 1. (a) Mailing and introducing cage. (b) Nursery and introducing cage. (c) Short block of nursery and cage, showing perforated zinc at inner end. (d) Introducing cage. (e) Block showing passage ways at further end of cage d.

much as three days longer, therefore it is well not to open the hive for at least six days after introducing. At that time, if it is found that the queen hasn't destroyed the queen-cells, tear them down, as the queen is apt to be superceded by the virgin if one is allowed to hatch. In such a case the colony may swarm out if strong enough. For laying-worker colonies or for those that have long been queenless, close each end of the long passageway with a slide (a small piece of tin), allowing the bees to enter thru the shorter passage and join the queen. At the expiration of six or eight days, turn the slides and allow the bees to eat thru and release the queen.

To remove a queen from the mailing cage to the introducing cage, get an Alexander bee-veil, rest it perpendicularly on the table, put the cages and hive tool in the veil, then reach inside and draw down the cloth. Pry the wire cloth off the mailing cage, catch the queen and put her in the introducing cage; or, if nervous about catching

her, place the cage over the queen and let her run in. Or, if time is not pressing, put the cages together so that the holes meet, and give a few gentle puffs of smoke, when the queen will cross into the other cage.

The principle of the cage is this: After the bees have eaten the candy thru the short passage, they are allowed access to the queen. The queen is not released on account of a perforated strip, which covers the inner end of the short passageway. Since it is only when the queen is outside of the introducing cage that there is any danger of her being killed, this perforated zinc does away with all danger of the queen being balled. The bees on entering begin feeding her, and thus get acquainted with her before she leaves the cage; therefore the queen is actually introduced before she is on the combs.

The Mailing and Introducing Cage.

The mailing and introducing cage (Fig. 1, a) is on the same principle as the introducing cage, just described. Holes 1, 2, and

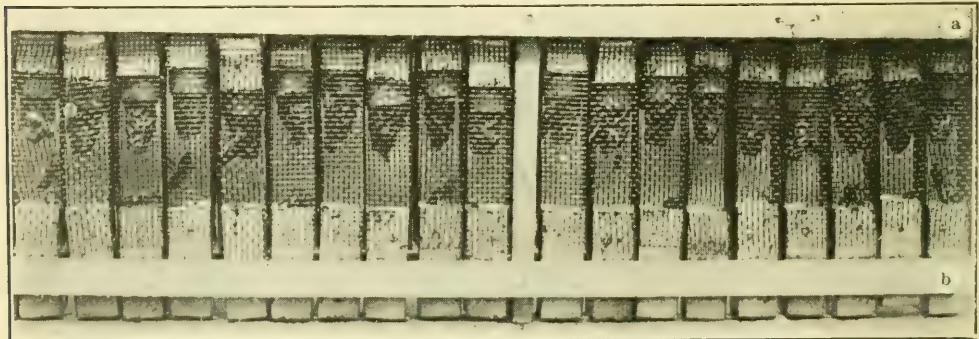


Fig. 2. These nursery and introducing cages are placed in the lower part of the frame, thus leaving the cells in a warm place near the middle of the frame. Bars a and b, mortised and stapled into the end bars, hold the cages in place in the frame. The upper half of the frame may be occupied by comb or a piece of board.

groove 4 are filled with candy. Hole 1 and groove 4 the bees eat thru at once. Since the entrance to hole 1 is shorter it is gone thru first, but the queen is confined, on account of a perforated strip at the opening of hole 1. The queen, therefore, has to wait until the candy in groove 4 and hole 2 is eaten thru, which takes a longer time. Holes 1, 2, 3, and groove 4 are covered with paper, and wire cloth covers the whole cage. At first I tried a cylindrical passageway, but it would not work, so I made a groove $\frac{3}{8} \times \frac{3}{8}$ instead. This final form of the cage has been tried out and has proved a success.

Nursery and Introducing Cage.

The nursery and introducing cage (Fig. 1.b) is also on the same principle, but the two blocks are $\frac{5}{8} \times \frac{7}{8}$ to admit queen-cells. The shorter block (1.c) has a $\frac{3}{8}$ -inch cylindrical passage and the longer one a $\frac{3}{4} \times \frac{3}{8}$ -inch groove covered with tin on one side and end. But the longer one may be bored and burnt out so as to give it a smooth surface, otherwise the queen refuses to leave. The nursery cage, when used as an introducing cage,

should always be placed horizontally in the frame above the brood and fastened to the comb with a 5d nail, or else sprung between the bottom bar and the comb. The cage should never be perpendicular, as the queen refuses to leave when the cage is adjusted that way. I have observed that when the cages are put near the top bar, a few fail to hatch, and those that do hatch are sometimes dark, being chilled. Therefore, I place the cages in the lower part of the frame as shown in Fig. 2, there being 20 cages to a frame. The cages are inserted upright between the bottom bar and a middle bar which is placed lengthwise at the center of the frame. The cages are held in place by bars a and b, Fig. 2 (both sides of the frame), which bars fit into mortises cut in the end bars and are there so stapled as to be easily removed. The upper half of the frame may be filled with a board or drawn comb to prevent the building of burr combs there. The cells are thus brought down to the middle of the comb where there is the most heat.



AN enormous amount of honey, in the aggregate, is lost in this country every season by the honey-shipper's carelessness in failing to provide proper shipping equipment when putting his honey crop aboard cars. This carelessness, in these times of sugar shortage and food scarcity, is especially reprehensible—almost criminal. It is entirely without excuse, save the excuse of ignorance, and ignorance is never a justifiable excuse. Slackness, laziness, and false economy are unfortunate personal elements among the causes of this honey loss in shipment, for suitable shipping containers and cases can be obtained by any honey-seller anywhere, providing he exercises a little intelligence and diligence.

That the readers of Gleanings might visualize some of this loss in honey shipment, due to poor containers or unfit shipping cases, our photographer got busy the other day in the receiving room of the Airline Honey department of the A. I. Root Co. The accompanying pictures are the result. They were taken from honey shipments in two cars, standing on the same track, at the same time, altho coming from widely different shipping points. The floors of both cars were covered with a mess of honey and dirt, while honey dripped everywhere from cracks in the car floors. What a messy, wasteful, nasty sight it was—and not at all uncommon to any large honey-buyer.

A NEEDLESS LOSS OF HONEY

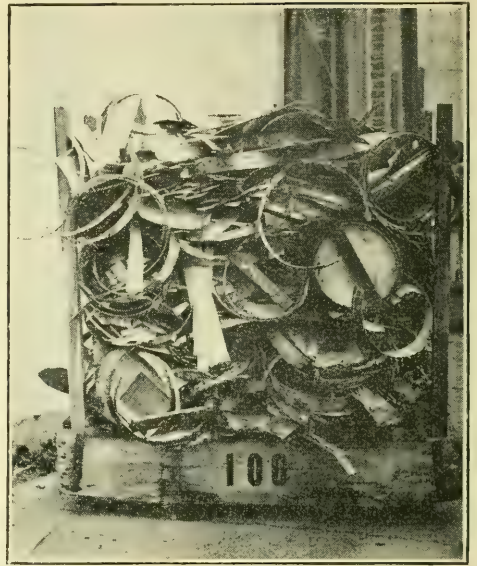
The Impracticable Round Container and the Old Store Box, Used as a Shipping Case, Cause Great Loss

By H. H. Root

Let us call our readers' attention to the first two pictures here shown, those of jacketed cans, a kind of honey-container strongly recommended in certain quarters not so long ago. One of the two accompanying illustrations shows the battered and leaky condition of the cans upon their arrival in Medina after long travel; while the other shows a pile of the wooden "jackets" that had been jammed and torn off in the car, illustrating just how little this wooden jacket (really a wood veneer) protects the enclosed round tin can. This shipment originated in Florida, consisting of 40 of these round jacketed cans. When they reached Medina, nearly every can was leaking and several were completely empty, more than 10 per cent of the total honey shipment being lost. In addition to this loss by leakage, there was an additional freight charge of \$7.44 over and above what it would have been if the honey had been contained in square cans and packed in regular shipping cases (which are only strong, tight-fitting wooden boxes). A round can as a container for honey or other liquid has long been condemned as a failure by the railroad companies. This is because of the fact that there is no way of keeping a round container upright and in its place on a car floor, and once tipped over it rolls about with every jolt of the car and gets battered or even knocked to pieces. As for the wooden jacket, about one-eighth of an



Wooden jacketed tin cans at the end of a railroad journey.

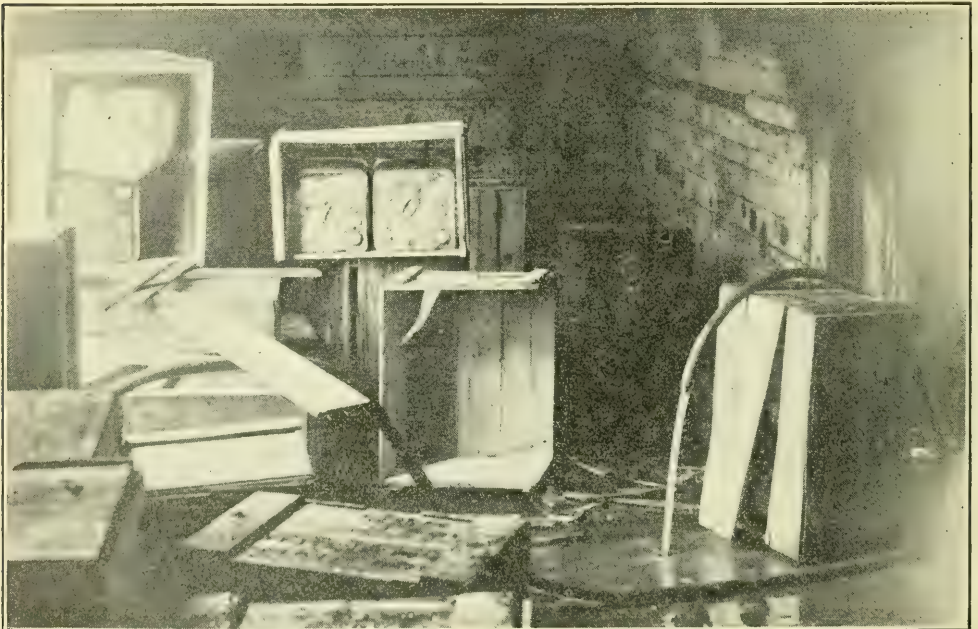


The wooden jackets of round tin cans don't stay on.

inch thick, it is about as good as nothing.

The second two pictures accompanying this article show the results of using any kind of boxes of any size as shipping cases in which to pack square honey cans. The pictures tell their own story, both of the damage to the cans and of the careless way in which they were packed. This shipment was made up of 49 boxes of extracted honey

in tin, shipped from Chicago to Medina. There was a loss of 600 pounds of honey due to improper packing, to say nothing of the labor cost of clearing up the sticky mess made in the car. Store boxes of various sizes and strength were used as shipping cases in making this shipment. Two cans were packed in each box, regardless of the size of the box, and no effort made to fasten



Result of packing honey cans loose in any kind of old box.

the cans in the boxes. Had this shipment been packed in regular shipping cases (or tight-fitting, home-made, substantial boxes),



A honey can after railroad riding loose in a box.

it would have arrived without the loss of a single pound of honey, as it traveled the entire distance from Chicago to Medina in the same car without transfer or handling.

The last illustration accompanying this

article is that of a correct shipping case containing two honey cans of standard size (60-pound). Honey can be shipped in this case any distance without loss. Such a shipping case is easily made at the beekeeper's home, or any wood-working establishment will make them at small expense. A saw-mill can supply the lumber for them in the right sizes, and the honey-shipper has only to nail this material together to have a perfectly good shipping case that will insure his honey shipment against loss.



Honey cans properly packed in a good shipping case.

AFTER reading the May number of *Gleanings*, if it were my disposition to go with the majority, and, if I wanted above all things to be in the fashion, it would be my policy to keep quiet. I know many will say: "Theirs not to reason why, theirs but to do and die." But even fashion has not appealed to me, altho that is always fairly easy sailing for the moment.

G. C. Greiner, on page 270, May *Gleanings*, states: "In a recent number (December, 1917) of one of our bee journals a prominent beekeeper tells of his plan of making increase in September, by dividing his colonies."

I make no claim to being "prominent," but, as far as I know, I am the only one

THE PLAN OF FALL INCREASE

Advantages Claimed for It, and Still Another Way to Do It

By R. F. Holtermann

I felt it was a revolution in beekeeping and worth following.

Mr. Greiner states that in his locality he would sooner winter the full colony and divide in the spring early enough to nip all swarming notions in the bud.

Now, I have an ordinary locality, a moderate amount of blossoms for bees to build up in the spring, if the weather is right (which it very often is not), and then no flow after clover, or, possibly a light bass-wood flow. My colonies are in 12-frame hives and are run not to swarm.

But I have divided even 10-frame hives,

guilty of having brought before the public this method of making increase. Truth to tell, I felt that I had to muster up my generosity to publish this, as

and after the extracting supers have been taken off, the entire front of the hive and space between brood combs and bottom of hive is often filled with bees. These colonies I have split up the first week of September, dividing the bees, combs, honey, and brood down the center of the hive, and next season these have given me 100 pounds or more of white surplus honey. Since first writing on this subject there has been added another severe winter's experience, and I have no reason to change my views.

The advantage I have over Mr. Greiner's method is that I have two queens producing brood all thru the spring where he has only one. I first looked at this proposition with much misgiving and trembling, but some years ago took the plunge and found the water not a bit cold and the swimming excellent. After I got in, I found several other boys had quietly been enjoying the same swimming place—no doubt feeling they had a good place.

Right in that article, Mr. Greiner stated: "Those colonies that fill five spaces or more on a cool morning, when closely clustered, are considered safe for wintering." Why! those I split up in early September covered eight frames and built comb outside of that when they were fed for winter, to which fact I have two student witnesses. Furthermore, running short of material when making them, I gave only five combs and no division-board to one colony in a 12-frame hive, and they wintered well last winter. Remember, I am not advocating splitting of swarmed colonies or swarm colonies or even one which has never had spunk enough to swarm under the treatment that a colony generally gets; but splitting up powerful colonies with plenty of brood in the brood-chamber.

Another Beekeeper's Method.

At the Watertown convention LeRoy C. Keath of Black River, N. Y., gave an address upon the subject of making increase late in the season, or rather making increase after the honey flow had stopped. It now appears that quite a number of beekeepers had been making such increase in a quiet way and "keeping it under their hats."

Mr. Keath's method has the advantage of providing a queen earlier in the season, and not entailing the risk of opening and dividing colonies during robbing time. The plan also permits the beekeeper to know there is a queen present. As to robbing, any good beekeeper should be able to go into an apiary and split up 10 or 15 colonies before the bees begin to get busy. Another advantage with Mr. Keath's method is that the bees do not require to be moved from one apiary or distant location to another, thus making it suitable for a person with only one location.

Mr. Keath during swarming time makes up one-frame nuclei, getting as many of these on hand as he wishes to make increase. The nuclei are made from colonies having

the swarming impulse, this giving him queen-cells reared under the swarming impulse, and taking from the colony wishing to swarm the needed brood and stores. Probably Mr. Keath would not object to giving the bees a comb of honey as well as the brood, thus making them safe for stores. He mentioned that the one-frame nucleus ought to be watched for stores.

When he gets ready for extracting by putting bee-escapes under the supers to be extracted, he puts the bee-escape board on the nucleus which is to be built up, and on this he puts three of these extracting-supers from three different hives—not three supers from one hive. He has an object in taking the supers from three different hives, and that object is to mix the bees so thoroughly that they will not kill the queen belonging to the nucleus below.

Six or seven combs from which the honey has just been extracted are given to the nucleus, and in that way the bees get the necessary comb room.

Mr. Keath stated that he had done this for three years. The first year 39 were made in the above way, and only one was lost during the winter. The next year 40 were made and all wintered well; and in the fall of 1917 there were 25 such placed in winter quarters.

I would warn beginners to be careful about putting the wet extracted combs into a weak nucleus during robbing time. It seems to me it would be better to put these wet combs into the hive after the bees have gone into the brood-chamber.

Of course, only strong stocks can be divided, those that would answer the purpose best being such as would have a good-sized bunch of bees outside of the entrance after the supers have been removed.

These methods of securing increase are a revolution in getting more colonies and are secured without the sacrifice of a pound of white honey. However, winter feed has to be supplied for the increase unless there is a fall flow; and, if that is the case, then it will likely decrease the amount of surplus fall honey from such sources as buckwheat, goldenrod, boneset, and aster.

It might be of interest to give my experience with some 70 colonies split up about Sept. 1 last year. By that splitting-up I had 140 such colonies, weakened in numbers. They wintered just as well as the rest of the bees. I could distinguish them by the division-board in them and by the fact that the hives did not contain 12 combs as did the others. In fact, on Apr. 29 I came across one which had been given only five combs in September. Therefore it is likely that at that time there was less than five combs of bees; and this nucleus, or colony (if you will honor it with that name) wintered in fine shape, and that, too, during a very trying winter.

[The reader should take good note of Mr. Holtermann's comment that only strong colonies are thus to be divided.—Editor.]



CONVERSATIONS with DOOLITTLE

How Best to Store the Honey and Combs After the Harvest

"Please tell us in your department of Gleanings something about storing honey and combs when they are off the hives. I have been keeping bees but a few years and want to fix more permanently for the future."

A good crop of honey may be greatly injured by the treatment it receives when taken off the hives, and while awaiting shipment. On the other hand the treatment may be such that the honey greatly improves.

For a honey-room, the first thing necessary to know is that there is a good foundation under that part selected for the room, and sleepers of suitable strength, so that should we happen to place several tons therein, there will be no danger of breaking down.

Knowing this, the next thing is to make the room mouse-proof. This I would have, let it cost what it would, even if I had to line every inch of it with tin, for the filth from vermin about honey is not to be tolerated at all. Having the room mouse-proof, all that is necessary afterward is to be sure the door is kept shut when not in use.

It is better to locate this room in the southwest corner of the building, and paint the two outside walls, which come next to it, black, or some very dark color, so that the rays of the midday and afternoon sun may be so absorbed as to heat the honey-room as much as possible, as the hotter and drier the honey can be kept when off the hives, the better it will ripen and keep afterward.

There should be two windows in the room, one on the south and one on the west side, which are to be opened on warm, dry days, so as to ventilate thoroughly the room and pile of honey. Over these windows, on the outside, is to be placed wire cloth, so the windows can be left open at pleasure, without any fear from robber-bees. To let the bees out, which may chance to come in on the honey or in any other way, let this wire cloth run eight or ten inches above the tops of the windows, nailing on strips of lath or other strips three-eighths thick, so as to keep the wire cloth out that far from the sides of the building, thus giving space for the bees to crawl up on the cloth to the top when they are on the outside. With me, no robber-bees ever think of trying to get in at this entrance, their efforts being directed toward the open window where the fresh scent of the honey comes, and, by so fixing, the room is kept clear of bees, flies, and insects all the while.* In hanging the door,

do not make the mistake that some do, of having it swing into the honey-room, for, if you do you will regret it some year when you have a bountiful crop of honey, as it will be greatly in the way at such times, and more or less at all times. Let it swing out into the main building, and hang it so that when you wish, it will swing clear around against the side of the room, thus being entirely out of the way.

On either side of the room fix a platform for the supers of honey, which should be at least six inches above the floor. The platform should be built nearly as solid as the floor has been, and should be so arranged that the air can circulate up between and around each super and the combs that are therein. Each super should be separated from its neighbor an inch or so at the bottom, top, and all around, so that the air can circulate all thru and about the honey, thus curing and ripening it thoroly. Very many fail here, and, after working hard to produce a crop, they let it deteriorate from one to three cents a pound in not properly caring for it after taking it from the hives. And not only that, but such poor honey, generally bought cheaply, injures the market to quite an extent for others. When fixing it, it costs little more to have it so your crop is always growing better, instead of becoming of less value, and after once fixed, the labor required for universally sending off a good article is not so great as it is to fix up that which has partly spoiled after its production. Then you wish your honey stored and piled as above, so that the fumes of burning sulphur, or something of a similar nature, can penetrate the whole pile, should it be necessary to fumigate on account of the larvæ of the wax moth being liable to injure it. Don't be afraid of a little extra work or expense in fitting up this room, for on it hangs as much of your success as the producer of fine honey as on any part of the pursuit.

And now about the room or closet for all frames of comb not in use or occupied by the bees. In some convenient place in your building, next to one side thereof, spike on 2 x 4 scantling, just as far apart as the top bars of your frame are long, using as many of these as you think you may ever have use for. Now nail strips of stuff 2½ feet long by five inches wide to these scantlings, letting them stand out into the room in a horizontal position. Let the distance between each strip from top to top be two inches greater than the depth of your frame, so as to give sufficient room to manipulate the

*The door of the room should be on the side nearest the general entrance to the building so as to save as much travel and lugging as possible.

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frames handily. Three inches from the ends of these strips run a partition clear across the space occupied for the purpose of storing these combs, which partition is to have close-fitting narrow doors placed in it, spaced so as to be most convenient. Close up the ends, and see that top, bottom, ends, and sides are as nearly tight as possible, so that in fumigating there shall be as little waste of the gases as may be. Now hang in the combs whenever you have any not occupied by the bees from any reason, and see that all combs, not in use, are in their places, and not scattered about somewhere else to be spoiled in breeding moths to your further detriment or a nuisance of some neighboring apiarist. As often as any signs of worms are found, put in your fumigating gases, close up the room, and the work is done.

G. M. Doolittle.

Borodino, N. Y.



MORE BUSINESS for the HONEYBEE

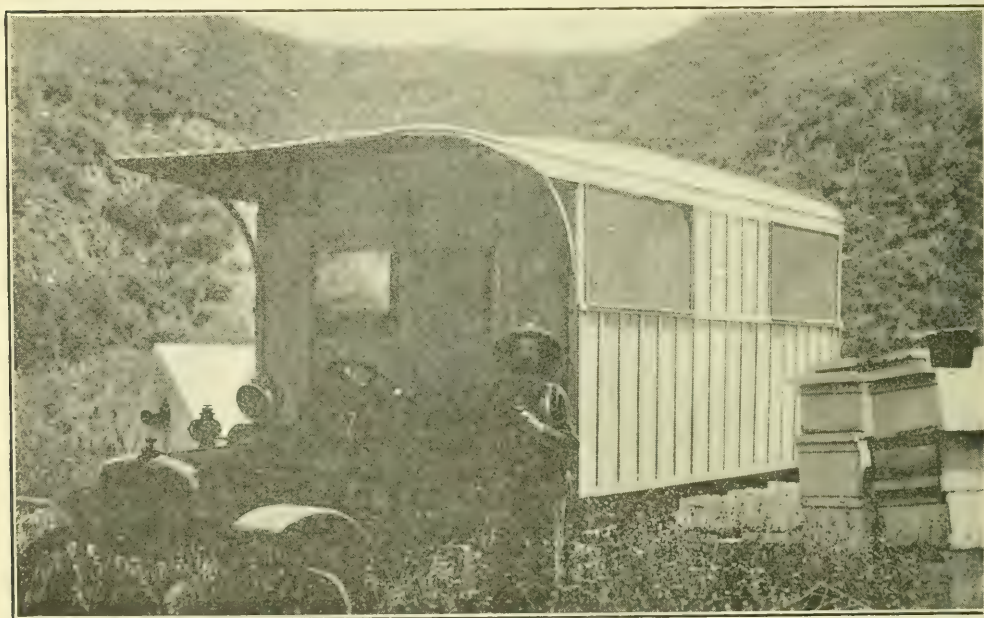
How the Automobile is Used as Conveyance and Extracting-House

A resident in southern California claims that until the motor truck was introduced into the honey business the honeybee did not know what it really was to work. Now this beekeeper has proved that he can almost treble the output of honey, and that until this time the bee has not actually shown what he can do, if given a fair

chance, and this chance has been given to the bee thru the motor truck.

It has been acknowledged, especially by the beekeeper in southern California, where the entire year is practically all warm weather, that the bees cannot do their best work, if they are permitted to remain in one place the year round. As a rule, they feed for a radius of two or three miles about their hives. For this reason they either do a lot of unnecessary work of going over flowers that have been already "drained," or they cultivate the habit of lying around idle a great deal of the time, which is anything but desirable.

Heretofore, the beekeepers have experimented in moving bees and doing the work by the means of horses and wagons, and even by freight, but the jolting wagons broke down the comb construction in the hives. The long confinement while the journey was in progress always killed a large number of the bees and thereby weakened the colonies. L. E. Mercer of Castaic, Calif., has demonstrated, however, that the method of bee transportation from place to place, to take advantage of the blossoming seasons in the different sections, may be done by the aid of the motor truck very successfully. Mr. Mercer equipped a ton-and-a-half truck chassis with a special house or body for it. In early spring he conveys his hives by motor truck from their home ranch in Castaic canyon to the foothills just above Glendora, Calif., a distance of about 64 miles, where there are hundreds of acres of orange



Here is an automobile extracting-house.

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groves, the blossoms of which make splendid pasture for the bees. When the honey season at Glendora is ended the bees are transported to the Ventura district, where they are permitted to remain thruout the summer, when the thousands of acres of bean blossoms are available. After the bean-blossom season is closed the bees are returned to the home ranch in Castaic canyon, where they gather honey during the winter from the blossoms of the sagebrush on the mountain side.

The method of transporting the bees is very interesting. By the aid of the truck the moving of the bees is carried on with remarkable speed and without the loss of a single bee. After the bees have done their day's work and have retired for the night, the owner carefully closes the entrances to the hives and places them gently within the truck, each load consisting of about 100 hives. The transporting is done at night, so that while the bees go to bed at Castaic they wake up the following morning in

grow stronger with the early pasture that the orange blossoms afford, so that instead of becoming run down in health on account of the additional work, the bees, because of having a richer pasture, are always kept in full strength. Altho of better quality the sagebrush honey is a great deal harder to gather, and it has been found that bees do much better work in the sagebrush after they have had a season in the orange or bean blossoms, than they did when they were kept constantly in the canyon.

Before the motor truck made it possible to transport the bees from place to place, eight tons of honey were secured from these 270 stands of bees. Now in addition to getting almost this amount of sagebrush honey, the owner secures from five to six tons of orange-blossom honey and between nine and ten of bean-blossom honey, which shows that the truck has been a good investment. When it is considered that last year honey sold for 12 cents a pound wholesale, it will be seen that this new method of handling bees is certainly a great success.

Tropico, Calif.

Albert Marple.



A view inside of the automobile extracting-house.

Glendora. As it is a smooth road all of the way, the bees, hives and combs are in no way damaged by the trip. In three nights the entire apiary is moved from one place to another.

The motor truck is not only used as a means of transportation from place to place, but it serves as an extracting-house. The room is equipped with a power honey-extractor, driven by a gasoline engine. By having the truck equipped in this manner it is not necessary to move the hives when they are heavy with honey, but before each moving process the honey is extracted and shipped from the nearest railroad station. The extracting-house may be backed right up to the hives so that it is always ready and convenient. The screen around its open sides protects the workman from the bees while extracting.

It has been definitely learned that after a winter in the hills the colonies of bees

ABOUT BREEDING BEES

Best Results Secured by Rearing All Queens from the Best Breeder

I should like to say a few words about breeding bees. I wrote an article on this subject years ago, but it was so near like one written by E. S. Miles that I did not submit it for publication.

In selecting our breeders it is not always safe to breed from your best, as I have found some of these to be poor to breed from; and a man who sends out a queen that has not been tested for breeding as a breeder is dishonest. It is not enough that she produce finely marked bees and lots of honey. Her daughters must be good and uniformly consistent honey-producers. Of course, the breeder's drones are selected stock and bring better results in the mating of said queens.

My best results in the past 15 years have been achieved by rearing all queens from my best breeder. I select for drone-mothers the best of these as to honey production and other characteristics—of course, mating these drones with queens from said breeder. This brings our breeding queens up to two or three years old, and the most of these live to be four years old. I was surprised that some one did not challenge Mr. Miles on the statement that rearing queens (Italians) from black or hybrid stock has an influence on said queens as to color and other things. I prefer a hybrid colony, if I happen to have one, for the reason that it raises larger cells and more of them; and I challenge any one to prove that there is any

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taint in so doing, any more than a lamb raised on goat's milk would be influenced by it, changing it to part goat. Again, queens do mate more than once, but never if fertilized at the first mating. And here is another thing: they mate the second time (or have done so every time for me) just three days from the first mating.

In closing let me say: breed from your best breeder; if not, then from your best queen, for thus you will be gaining; but faster and more surely by breeding from the best breeder.

Geo. B. Howe.

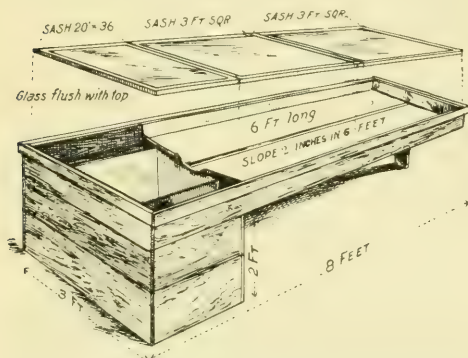
Black River, N. Y.



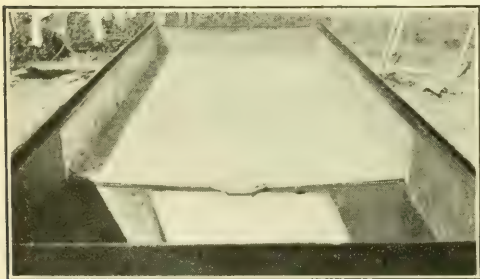
A V-SHAPED SUN EXTRACTOR

One That is Bee-proof and also Practically Air-tight

In the past I have experimented a good deal on different kinds of sun extractors. First I made the flat kind so commonly used. Then I made a curving dip at the center,



with three different degrees of slope, which extractor worked better than the flat one; but still it was not just what I wanted. Next I made the V-shaped sun extractor. First the V had too great an angle, then it



View showing the melting surface.

was not enough. Finally I made the one shown in the illustrations.

These sun extractors can be made in any size. The one I have now is 3 x 8 x 2 feet, inside measurement. The two larger glasses

are 3 feet square, and the smaller one is 20 x 36 inches. The glass frames I made lighter than the real frames. The glass windows are flush with the top of the railing. The galvanized-bottom melting surface is 3 x 6 feet, each half being 1½ feet to center,



Exterior view of the Sun Extractor.

and soldered down where the lapping takes place. This V-shaped sun extractor has a one-inch slope to three feet, as can be seen in the drawing. It is important to have the slope just right. Too much slope spoils the pudding, and not enough is nearly useless.

I use a wax-pan holding 25 pounds of wax. This pan needs no separator, and leaves all of the dirt after the honey and wax have left it. I always keep a two or three-inch channel open for the honey and wax to run down to the wax-pan.

This kind of sun wax-extractor has a double slope to the melting (running) surface, there being an inward slope to the channel and the longitudinal two-inch slope to the wax-pan. No screen nor cheese-cloth is used.

I do not believe in long narrow strips of glass, such as I have seen some use, as it results in too much wasted heat, and attracts too many bees. My sun extractor is bee-proof and nearly air-tight. If a sun extractor is made right, your worry is at an end; but if not, do not keep it in a foul brood apiary.

F. J. Severin.

Imperial, Cal.



PREFERS SUPERSEURE QUEENS

Why Old Queens Secure a Much Superior Breeding Stock

Last year there appeared in Gleanings an important article by J. W. Nichols in which he stated that one of his queens was at her best when eight years old. I believe that this is the the only kind of queens to keep for breeders, if a long-lived stock of bees is ever to be secured. How can such a strain be produced, if all queens are replaced each year? Or why replace a queen capable of supplying several millions of eggs when she

FROM THE FIELD OF EXPERIENCE



has laid only a small fraction of the possible number?

While it may be true that old queens are more inclined to swarm, I have never had to replace more than one for not keeping the colony up to the average size, and she supplied a small apiary with superior drones for an entire summer when they were absent from all the other colonies. This, by enabling me to extend queen-rearing, was worth many times the honey ever produced by a single colony. By breeding these old queens year after year, I keep a stock of goldens that surpasses all the dark strains I have ever seen.

It is not only to secure superior breeding stock in both queens and drones, nor to avoid the fussy work of annual requeening, that I keep old queens. My main reason is that the young queens that supersede these old ones produce so much harder a strain of bees than do the queens reared artificially. I would even be content to have a few colonies swarm, or even produce a smaller crop for one year, since these strong supersedure queens produce so many long-lived winter-surviving workers that they make up the loss the following summer. This supersedure stock is all those eight-year queens come from.

L. E. Kerr.

Fort Smith, Ark.



WHAT A GROCER DID

He Got Honey so Fast that He Had to Hurry up with a Wheelbarrow

As a suitable side line for the grocery business, I decided to try beekeeping. Therefore in the fall of 1916 I bought 52 colonies of fine Italian bees, with young queens. They all wintered so well that I did not lose a single colony. About Apr. 15, I put them on their summer stands in an orchard, bought expressly for the bees, the orchard containing 75 apple trees and a great number of raspberry bushes. When the young queens began laying I took a record of every hive, helping the weak ones as soon as I could get brood from the strong ones. I examined each hive once a week, forestalling swarming, so that when the honey flow came they were all in pretty good condition and but four or five swarmed.

The honey flow lasted only 15 days. When I first removed two full supers of honey at a time I thought that was pretty good, but later on I had to take away honey so fast that I was obliged to use a wheelbarrow and remove five supers at a time. From the 52 hives I got 3,800 pounds of white clover honey. I took some to the Minnesota State Fair and received second premium on the extracted, and also on ten frames of nice white clover honey that was not extracted.

This honey I disposed of in the store and

it sold very rapidly. Whenever the glasses of honey became a little candied I put them on top of the radiator. In about five hours the honey was as clear as if I had just extracted it.

Last spring I sold two colonies to a woman, who made one colony increase and got \$23.00 worth of honey. How is that for two hives of bees?

Paul Knechtges.

St. Paul, Minn.



A PRIZE WINNER

Tells Some of His Experiences and Pleasures as a Beekeeper

In the spring of 1873, when I was just a boy, my father, for the sum of \$100, purchased 10 colonies in eight-frame Langstroth hives. That season he divided them into 30 good colonies. The next season, he sent to Italy for pure-bred queens. We increased that year to 100 colonies, and the next year to about 300, both seasons extracting some honey.

The next season the bees contracted the swarming fever. Some queens were clipped, and some were not; some swarms were in the air, and some in the trees. We returned all the swarms possible to the original hives, killing the old queens and destroying the queen-cells. We knew nothing about supers, but extracted all the honey there was in the hives. It was the busiest summer I have ever put in. I think I must have traveled 1,000 miles or more that summer. Father shook and brushed the bees off the frames that he took out to extract, and I carried them to the honey-house and returned the empties. (How I should love to live it over again with father there! and how we would "deck 'em" up!) Well, we slung out a fine lot of honey—ten big barrels and some comb honey besides. We had a big crop of white and alsike clover, then basswood, winding up in the fall with what some one told us afterward was honeydew, gathered from the leaves of hickory trees. That winter nearly all of the bees died; and, altho I have always kept bees since, I have never seemed to get a good start.

Two years ago I woke up after dreaming that there were tons of honey going to waste in my locality, since there are hundreds of acres of white and alsike clover, also sweet clover in abundance, with only two beemen near. In the spring of 1917 I started with 60 ordinary colonies, and obtained 3,000 pounds of extracted and some comb honey. I also won the prize at the Wisconsin State Fair for the largest amount of extracted honey from one colony, producing 210 pounds (see Mr. France's report in the March issue). Most of the crop I sold at 15 cents a pound.

Fred Alger.

Waukau, Wis.

DOOLITTLE

Dis mentioned, page 397, July Gleanings, as "the first man to demonstrate that queens can be reared in an upper story with a

laying queen below." G. M. Doolittle is the man who deserves credit for making practical use of it, and bringing it into prominence, but he never claimed to be the man who first discovered that a queen might be reared over a colony with a laying queen. In "Doolittle on Queen-rearing," page 93, edition of 1889, he says:

"At about this time, I saw in some of the bee papers, that, by accident, a queen had become fertilized, in an upper story of a hive worked for extracted honey, the same having a laying queen below, with a queen-excluding honey-board between the upper and lower story, the queen having gone out to meet the drone thru an opening which had been left between the upper hive and the queen-excluder. I was not long in seeing where my hobby might now be brought to the desired consummation, so I began experimenting."

That first case of "accident" Doolittle has evidently mixed a little with things that were done afterward, and as a matter of history it may be well to tell how the first case on record happened. It was this way: A beekeeper had on hand a number of empty brood-combs that he wanted to put in the care of bees, to prevent the ravages of the bee moth. He piled them up several stories high over a hive with a laying queen. Feeling afraid that the bees might not pay much attention to the uppermost combs, he put in the upper story a comb of brood. No excluder was used; merely the frame of brood was a long way from the queen. No attention was paid to the pile for some weeks, when he was greatly surprised to find a nice brood-nest in the upper story, and a queen with whole wings busy laying. No opening had been intentionally left thru which the queen might go on her wedding-trip; that was another accident. That beekeeper deserves no special credit for his discovery—he couldn't help himself—but when he published it Doolittle, with his keen perceptions, put it into practical use.

* * *

Editor Townsend has in The Domestic Beekeeper a department that is rich in information, in which he answers questions about his own practice in beekeeping. From the June number I cull the following:

"Mr. Townsend was successful in producing extracted honey without excluders, the plan being to add empty supers on top, the theory being to keep the queen below by so doing. But it is a mistake to give surplus room enough to hold the brood the colo-

STRAY STRAWS

Dr. C. C. Miller

ny would naturally rear, and also room for the surplus honey. You must give only room for the surplus honey, 'forcing the queen below,' especially

toward the close of the season.'"

"We used to paper our inside-wintered bees during the spring, but do not any more, and as far as we can see we get just the same results. Mr. S. D. Chapman, Mancelona, Mich., papered every other colony in one of his yards one spring, and he could not see any difference in honey secured between those papered and those not papered."

* * *

Irving Kenyon, according to a report in The American Bee Journal, page 205, June, has suffered from a peculiar trouble, the honey fermenting in the cells and often bursting the cappings, being decidedly sour. He thought it might be due to a microbe within the hives, perpetuating itself from year to year, and finally resorted to the extreme remedy of shaking all his bees upon sheets of foundation in the spring and melting up the old combs into wax, the same as in treating American foul brood. Mr. Kenyon says: "I don't pretend to know the cause of this trouble, but after 15 years' experience with it I am well satisfied that it is contagious and is spread by robbing. Not having a single colony that did not show it in 1916, in 1917, after shaking, I saw it in less than one-fourth of one per cent of the honey. I expect to shake again this season, and think that will clean it out entirely."

In June Domestic Beekeeper, page 170, honey is reported as going wrong in much the same way, and Editor Townsend ventures the guess that there is a fungus in nectar (similar to other sweets of same consistency), which is usually forced out of the nectar in the process of evaporating. He thinks it may be the fault of the season—a cold period during the honey flow—and that some colonies may have more of the trouble than others, in which case a change of queens might be advisable.

* * *

Last winter I contracted a cough that was exceedingly persistent, and for a time I was a bit anxious lest it get the better of me. After taking a good deal of the stuff the doctor prescribed, and I should add after partly overcoming the cough, I substituted for other medicine candied extracted honey. I'd take a chunk perhaps the size of a black walnut, put it in my cheek, and let it slowly dissolve there. The result was very satisfactory. I'm not ready to say that honey is better than a good cough medicine prescribed by a capable physician, but I'm sure

it is a help to take it each time there is an inclination to cough, and it may be worth while to give it a fair trial. Pretty much all cough medicines have in them either some preparation of opium or else something to nauseate you, and too much of that sort of thing is not so very desirable. Just possibly, in a good many cases, honey may do the business without the things objectionable.

* * *

The views of Jay Smith and Mel Pritchard, page 406, and of Mrs. Allen, page 414, as to the behavior of queens, are interesting. It's a little hard to believe that queens and workers are not both governed by the same rules. I've had an idea that in locating a hive they were governed by form rather than color. Yet a good many times I have seen bees flying in front of their hives in a confused way, as if having a playspell or preparing to swarm, and only because the entrance, all the rest of the day in the shade, was for a few minutes in the sun. That looks as if they paid attention to color. Here's pretty strong evidence that form is the chief thing: Let hives be placed in a straight row six feet or more apart, with no trees or other objects to help mark location, and there is some danger of getting into wrong hives. Let two nuclei be in the same hive, with a front entrance divided between them, and there is no danger as to confusion of the entrances. They are safer at six inches apart than are the entrances six feet apart in the straight row of hives, because the bees go by form, and don't mistake right for left, or vice versa. Mrs. Allen, I don't know for sure, but I've some idea that a young queen takes its first flight on the first day it marks its location, and also does some marking each time it takes a flight. Like you, I have been careful not to change the place of a young queen from four to eight days old, "lest I muddle her geography with disastrous results."

* * *

J. E. Crane, you say, page 411, that you have no fall flow from which to secure combs of sealed honey for spring feeding, and, if you secure such combs, it must be by the middle of July to the first of August. Well, such combs will answer very well; but since you prefer to use sugar, seeing it's you, I give you my permission to do so. At the same time, I wonder whether in the long run it may not be cheaper to use the early honey. Isn't it just possible that the vitamins and minerals found in honey, and not at all in sugar, may give such stamina to the bees as to make them store enough extra to make up the difference and more?

* * *

"Helpmeet," page 400, speaking of combs of brood piled up eight stories high, says: "Later, after considerable of this brood has emerged, some of the hive bodies are slipped forward or back to allow additional entrances." I hardly think "Help-

meet" means that these openings are used by the bees as places of exit or entrance, but valuable for ventilation. In about all of my beekeeping life it has been my practice to make openings for ventilation at one or more points above the brood-chamber, and it is a curious fact that in not one case out of a hundred do the bees use these openings for entrances, no matter how convenient it might seem. Having established an entrance at a particular place, they seem to think that one entrance is enough.

* * *

Bees by parcel post! That's a big thing for short distances, and possibly for long. How will it compare as to the matter of cost with sending by express from the South? [In the fifth zone for instance, the parcels post is cheaper up to 15 pounds—very much cheaper on small packages; over 15 pounds, express is cheaper. In the fourth zone, the advantage lies with parcels post up to 25 pounds, and this advantage is still greater in the first, second, and third zones. The nearer the zone, the cheaper is parcels post as compared with express, and vice versa.—Editor.]

* * *

Poor Bud Tomlinson! page 402. He's not likely again to want to carry honey in his trunk, but if he should want to do so, I can tell him how I did it, simply doing it up in paper, just like so much dry sugar. I laid the vessel of candied honey on its side and left it till all the liquid had drained out. Then I did it up in paper and put it in my trunk. But it will not work with all honey. Some honey of fine grain cannot be thus drained; it will either all run out or else not at all.

* * *

G. M. Doolittle was one of a thousand among beekeepers; a clear thinker, a careful experimenter, a successful beekeeper, and a lucid writer. But more than all this was the character of the man as a man, always standing for what he believed to be right and true, no matter whether it was popular or unpopular. A good man has gone to his reward.

* * *

When a colony has queen-cells after swarming, you say on page 427, "If one desires to improve the strain, all these cells may be torn out and another queen introduced or a capped cell (in a protector) given them." Is there really any need of the protector?

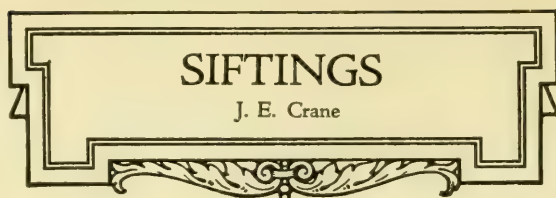
* * *

"It is admitted by our best beekeepers that bees, even during a severe winter, will do better on sugar stores," page 394. Isn't there a sort of all-inclusiveness about that that is hardly warranted? Don't some prefer good honey?

* * *

Our bad drought was at last broken by a pretty good rain June 30, in time, let us hope, to save from drying up the bounteous spread of white clover.

WHILE clover came into bloom unusually early this year, it was of little value to bees until the 25th of June, owing to cold, rainy weather. On the 25th the clouds gave way to warm, sunny days, and within 24 hours the yards of bees were all bustle and activity and good colonies beginning to work in supers. Doesn't it make one feel good?



Pictures are certainly instructive, and that on page 398 illustrating the results of extracting unripe honey is no exception. My! I can almost taste it, just looking at those dauby cans, and smell it too.

To be able to predict with some degree of certainty just how long the flow of nectar from any given source will last, is of considerable value; but with many years' experience we find it is not always an easy thing to do. A cold rain or sudden drouth or bad atmospheric conditions may upset our best predictions.

I was surprised to learn thru the July number of Gleanings of the death of our friend, and everybody's friend, G. M. Doolittle. How fast the old writers in Gleanings, that we had come to admire and love, are passing away! For one, thanks to the light of a glorious Gospel, I am grateful that I do not have to think of him as having gone out into darkness, but rather as having passed on into a freer life, where all the nobler longings and aspirations of his soul may be realized.

In the Editor's comments on "Apiaries at Long Range" he says, "European foul brood with a good strain of Italians can be and is being controlled so that it is not a serious menace in most cases." This statement is a fact that I wish more beekeepers could realize and appreciate. Hives of black bees that I found in my inspection work last year, badly infected with European foul brood, and gave directions to either Italianize or destroy, I have found this year filled with beautiful Italians and free of disease. But let us not think that Italian bees are a sure cure, for we occasionally find some of the brightest Italians subject to disease. Such, in spite of their beauty, should be treated the same as blacks.

For one I am glad Grace Allen is intending again to try packed hives another winter, after her unfortunate experience of last winter. I have begun to think there are more kinks to wintering bees than the wisest have dreamed. It is something of

an eye-opener to inspect bees after such a winter as the past one has been. I confess it has knocked a good deal of conceit out of me, when I found some

colonies that according to all orthodox rules should have died, alive and strong, and others that should have lived, dead as a door nail. That hive bottom side up that Mrs. Allen speaks of, page 415, is a fair sample. I found one single-walled hive on a bench three feet above ground exposed on all sides, with a hole in one side six by eight inches, and yet it survived in spite of all our zero weather. Sometimes I think I don't know; and then again, I think, with plenty of stores and enough young bees, some of the things we have thought so essential could be dispensed with.

The old-time school-teachers of the country districts used to mix bits of truth with the copies they set for their young pupils to learn the art of writing. A favorite was:

"Many men of many minds,
Many birds of many kinds,
Many fishes in the sea,
Many men that don't agree."

I have thought of it many times these later years. It is as true today as in the days long ago—as true of beekeepers and beekeeping as in the world of politics and religion.

When I wrote some time ago that shallow extracting-frames were a nuisance, I wrote from my own experience and method of management; and I can hardly regret it, for it has brought out many nice things said in favor of the shallow frames that otherwise we might have missed.

For various reasons I prefer an extracting-frame that is interchangeable with the frames of the brood-chamber.

Our seasons are very short and often a colony lacks five or ten or more pounds of winter stores that can readily be supplied from super combs. Also for spring feeding, frames of honey from a super is a most convenient way of feeding. Where two shallow extracting-supers are used for a brood-chamber, as some beekeepers are doing with excellent results, of course, shallow extracting-supers would be preferable. I am not sure but that such hives have more advantages and can be managed with less time and labor than any other, but I have not tested them out, and can not speak from experience.

I have no difficulty in getting bees to work in supers with full-depth Langstroth frames, and prefer them; but if any one can secure better results by using shallow frames, by all means use these.

FOR years there has been no molasses in the Puerden pantry. When I wished to test a recipe calling for molasses I pried off the top of my ten-pound honey pail, which always occupies a prominent position in my pantry, measured out the amount of molasses called for in thick, golden honey, and compounded my recipe to my own satisfaction and that of my family. Of course I always adjusted the amount of soda to suit the change in the recipe.

But recently I have been working out conservation recipes for a local publication, as there has been such a demand for wheat-substitute recipes, and with the price of honey what it now is, I decided to order molasses for experimenting on those recipes. I therefore asked my grocer to send me the best molasses he had in stock. If what he sent me is the best, I wonder what the worst would be. I tried it first in a barley-flour spice cake. The cake was quite spicy and contained a cup of fruit, but when I tasted it I thought my barley flour must have been kept too long. There was a strong and disagreeable flavor to the cake.

I next used some of the molasses in a steamed cornmeal and barley-flour bread, a recipe for June. The Puerden family are fond of that particular kind of brown bread, and we use it very often to save wheat. But that made with molasses, altho it was soft and looked tempting, had a flavor that was pronounced and unpleasant. The next time I made that brown bread the head of the Puerden family looked at it suspiciously and inquired if there was any molasses in it. He did not want to even taste it if there was.

You may think this is a case of prejudice on the part of a beekeeper's family, but I find other housekeepers have had the same experience. I have gone about the country a number of times in the past few months, giving informal talks in the interests of food conservation, with demonstrations of wheatless foods. In several cases, when I have been giving recipes calling for molasses, housekeepers have said:

"What can we use in place of molasses? We do not like the molasses nowadays."

The fact of the matter is, molasses is not what it used to be. As made at present, there is very little sugar left in it. Modern methods of refining sugar tend to remove more and more of the sucrose from the remaining molasses, and the molasses itself is so concentrated that the resulting product is altogether too strong in flavor to be attractive as a human food. And

OUR FOOD PAGE

Stancy Puerden



on sale in this country is practically saturated with sulfur dioxide and is, in my opinion, not wholesome. * * 'Karo' contains no sulfur fumes."

Southerners have told me I should taste the old-fashioned kettle-rendered cane syrup, which is the pure juice of the cane boiled down, nothing added to it and nothing taken from it. I believe this may still be obtained in certain localities in the South.

If you have ever travelled in a country where there is sugar cane, you have probably seen the natives chewing a section of the cane as the Northerners eat candy. No doubt we should all be better off if we ate our sugar more nearly as nature gives it to us, instead of the refined, concentrated, granulated sugar, deprived of its valuable soluble minerals in the process of manufacture. A recent medical journal goes so far as to call granulated sugar "a vampire which robs the human system of the valuable minerals which it lacks itself." The danger arising from a large proportion of refined sugar in the diet is not because it contains anything harmful but because of its lack of constituents essential to the building and maintenance of the tissues.

Now, we beekeepers pride ourselves on the fact that honey is nature's own and only concentrated sweet, the only sweet known to antiquity, and that it has not been robbed by man of its valuable soluble minerals, that it contains the class of vitamins known as "water soluble B," that it is partially predigested, and that its aroma is the fragrance of the flowers.

But, and this is an almost insurmountable 'but' to me, how are we going to induce the public to give to honey its rightful place in the daily diet at its present price? Before the war I had been hoping that the time was coming soon when Americans would appreciate honey as much as Europeans do. From my standpoint, it looks as if we were now educating Americans to believe that honey is a luxury, something quite beyond the means of the ordinary family. When this unprecedented demand for honey to be shipped abroad stops, where will our honey market be?

I am going to say something else, even if I have a husband who has several small bee-yards. I cannot endure to think that beekeepers are among those who are making excessive profits because of this terrible war. Don't misunderstand me. I believe honey should be higher in price than sugar for the reason that it is a better food. But,

many dietitians question its wholesomeness, as now made.

Dr. Harvey W. Wiley says, "I regret to say that in so far as I know the domestic molasses

going out among people as I have the past few months, talking with them on food questions, I cannot help seeing that there is a good deal of this spirit, as shown in the following question:

"Why should we farmers be expected to raise and sell wheat at the price we do, when the price of some other foods, such as honey, has gone so high?"

You see farmers are asked to increase their production of wheat to the utmost, but the price of wheat has been fixed, and the price of sugar has been fixed, while the price of honey has gone beyond anything ever before known. If the whole world were not so much in need of sweet at the present time, I should not feel as I do about this matter, but it hurts my pride to have the patriotism of beekeepers questioned.

There, I have said a part of what has been on my mind for some time. Perhaps it might be well to mention that this was written without consulting the editorial staff in general.

* * *

Many housekeepers do not realize that none of the substitute flours have the keeping qualities of white wheat flour. They should be ordered only in small amounts. I believe much of the prejudice against barley flour is because housekeepers order it, put it away and forget it, and then, when they finally do use it, they complain that it has a strong flavor. While it has a flavor quite different from that of wheat, many have learned to like it who did not like it at first. It is especially good in spice cakes, chocolate cakes and cookies, as it is soft and fine and more like wheat flour in texture than any of the other substitute flours.

Notice among the recipes I am giving a rice-flour sponge cake which calls for six eggs instead of four. This is a cake which I make only for special occasions. It is as light and fine grained as an angel food cake and just as attractive looking. Also, it can be baked the day before it is needed, being tender and moist when one or two days old. When one can make such delicious cakes without any wheat flour, there is not the slightest excuse for using it, even for wedding cakes.

Don't fail to try that wheatless, sugarless, raisin pie. It is the best substitute piecrust I have tried yet, and the filling of honey and raisins is ambrosia itself. The color of the crust is a trifle dark, but when you have taken one bite I will venture to assert you will think no more of its complexion.

Please don't accuse me of inconsistency in giving a recipe for marmalade made with honey, after complaining of the high price of honey. You see that high-priced honey will go farther if you mix fruit with it.

VICTORY BREAD WITH BOILED RICE.

1 cup rice	$\frac{1}{2}$ cake dry yeast softened in
$2\frac{1}{2}$ cups water	$\frac{1}{4}$ cup warm water
1 tablespoon sugar	about $6\frac{1}{2}$ cups flour
2 teaspoons salt	

Cook the rice in the $2\frac{1}{2}$ cups water in a double boiler until the water is all absorbed, add the sugar, the salt, the yeast softened in the $\frac{1}{4}$ cup warm water and enough flour to make a stiff sponge, about $2\frac{1}{2}$ cups. Beat this sponge well, cover and keep in a warm place over night or about ten hours. In the morning add about four more cups flour, enough to make a dough, and knead until smooth. When light, divide into two loaves and let rise again. When light, bake in a moderate oven. In warm weather it may be advisable to add $\frac{1}{2}$ teaspoon soda with the flour in the morning.

OATMEAL DROP COOKIES.

(Adapted from Airline Honey Book.)

1 cup honey	1 tablespoon cocoa
1 cup sour cream	1 teaspoon cinnamon
2 eggs	$\frac{1}{4}$ teaspoon cloves
2 cups rolled oats	$\frac{1}{2}$ teaspoon nutmeg
$2\frac{1}{4}$ cups barley flour	$\frac{1}{2}$ teaspoon salt
1 teaspoon soda	1 cup chopped raisins
1 teaspoon baking powder	$\frac{1}{2}$ cup sliced citron

Blend the honey with the sour cream, add the beaten eggs, the rolled oats, and the other dry ingredients sifted together. Add the fruit, beat well and drop by the teaspoonful on a well oiled pan. Bake in a moderate oven. They may be baked in muffin pans.

COCOA DROP COOKIES.

3 tablespoons shortening	4 teaspoons baking powder
1 cup honey	
$\frac{1}{4}$ cup milk	$\frac{1}{3}$ cup cocoa
1 egg	$\frac{1}{8}$ teaspoon salt
About 1 cup barley flour	1 teaspoon vanilla
$\frac{1}{4}$ cup Cream of Maize	chopped nuts

Cream the sugar and shortening, beat in the egg, add the milk and then the dry ingredients in which the baking powder has been mixed. In this recipe, measure the barley flour before sifting. The Cream of Maize may be omitted and half a cup more barley flour used instead, if preferred. Drop from a teaspoon on a well oiled tin, sprinkle the chopped nuts over and bake in a moderate oven. They may be baked in muffin pans, if preferred.

RICE FLOUR SPONGE CAKE DE LUXE.

1 cup sugar	2 tablespoons lemon juice
6 eggs	
$\frac{3}{4}$ cup rice flour	$\frac{1}{4}$ teaspoon salt

Separate the whites and yolks of the eggs and beat the yolks until thick and light colored; sift in the sugar, beat until smooth and creamy, beat in the lemon juice, and then carefully fold in the stiffly beaten egg whites before beating. Last of all, fold in the rice flour, measured before sifting, a little at a time, put in a sponge cake pan and bake in a slow oven about 45 minutes.

WHEATLESS, SUGARLESS, RAISIN PIE CRUST.

1 cup barley flour	1 teaspoon salt
1 cup cold mashed potato	$\frac{1}{2}$ teaspoon baking powder
$\frac{1}{4}$ cup shortening	cold water

Mix the flour, potato, salt, and baking powder and cut in the shortening with two knives. Roll out the lower crust, cut in four

(Continued on Advertising Pages.)

BETTER be a side-line beekeeper than a main-liner, when honey-producers are saying, as they are in middle Tennessee in this month of

July, 1918, "Our fair hopes all went glimmering." I don't know just exactly what fair hopes do or where they go, when they go glimmering, but I do know there's not going to be as much honey as we had expected. Extracting is not yet completed, but some beekeepers around here say they won't have any honey at all to take off. One Williamson County producer looks for about a 40-pound average from his producing hives. But they won't all produce.

The prospects were unusually bright this spring, tho I regretted seeing clover come so early, as many bees were not ready for it. But it brought good promise with it—there seemed to be a wealth of it, tho the distribution was not even—but alas it did not fulfill the promise. No two beekeepers offer the same explanation. "Too much rain in the spring washed out all the nectar," one says; "so little rain this summer, it sort of dried up," says another; "there just wasn't any nectar," still another asserts. Personally, I don't know—tho I do know we are disappointed—again. And I do know, too, that Dr. Phillips says the nectar secretion of white clover is "quickly affected by adverse weather conditions." And we've had all kinds of weather conditions, adverse and all. The present dry spell has lasted so long it has become a real drought, and now, without rain, we have passed from very hot to very cool.

* * *

This year, as I have used far more shallow supers than ever before, I feel justified in adding an opinion to the many others that have been expressed pro and con. I like them very much better than the full depth. Just because they are lighter to lift off, you will say. That is a very important reason, and the one that prompted their purchase in the first place, but it is by no means the only reason. In a locality like this, where there are not often heavy crops, the shallow supers are particularly valuable. The clover honey, even tho only a small crop, will be safely sealed over before bitterweed comes on or honeydew puts in its appearance. And if the season is good, you have only to tier them up. They make more combs to uncapp at extracting time, true, but the uncapping is easier, comb for comb.

And as Miss Fowls once cleverly suggested, if one is quite too proudly strong to be willing to lose the opportunity that the full-depth supers afford to display his strength, let him insert his tool under two of the shallow supers and toss them off double.

Yes, in consideration of my locality and

Beekeeping as a Side Line

Grace Allen

the fact that I am not a stove-dore, I have definitely planned all full-depth bodies for brood-chambers, and expect to take surplus honey hereafter a l-

most entirely from shallow frames. Unless, indeed, I finally get into Long Idea hives. That experiment was scheduled for this season, but somehow the eggs slipped, and so it must await 1919 for trial.

* * *

In spite of the fact that in the last three weeks we have made rapid downward revision of our crop prospects, and the total will doubtless fall far short of our hopes, yet the contrast between our new country location and our own home yard continues to be impressive. In the country, a few hives grew to quite a chummy height—another super, and the bees and I would have stood shoulder to shoulder. Altho this noble height was partly the result of hopes that failed to materialize, yet for any such towering condition, I choose the shallow supers, for the large combs, if filled, I have to lift cut one by one till the super is of a liftable weight; and that is certainly a slow and tedious process.

* * *

The Pellet plan of increase (based on raising and mating the young queen in a super), tried out in three colonies, was successful in two. In the third, the young queen was found lying dead on one of the top bars. But, except for making the hole in the supers, I liked the method very much—it was so safe and sane. In fact, it looks almost fool-proof. Even where there was no increase, there could be no loss. While there is no surplus in the hives whose brood was thus raised to start the new colonies, that fact would seem chargeable to the person rather than the system. The new colony I set off yesterday is populous and has a wealth of stores, and is in much better shape than the little colonies started at about the same time, as nuclei. Whether big producers would care for it or not, it seems well worth while for side-line beekeepers to try out.

* * *

When workers are seen tugging away at drones, the end of the honey flow is likely upon us. When they start a wild case of robbing, it quite surely is. Both of these unwelcome occurrences were part of one day's demonstration at Peabody College Summer School last week. Combs of honey that would have been left unmolested two weeks before started a little riot before I realized. The usually gentle colony became resentful—to the great regret of at least one student—and hives had to be closed in a hurry. I tossed weeds over the entrances, plied the smoker vigorously (lacking ear-

bolic or kerosene) around covers and cracks, and sat down on a box to watch developments. After a bit things quieted down, and I left them—apparently well-behaved and worthy citizens of the peaceful little bird preserve where they are located. But this morning comes the message that they are making life miserable for the young women who are canning some precious sweets in the demonstration kitchen! Truly the way of the beekeeper is hard.

* * *

On page 430, July Gleanings, Mr. Byer speaks of how early city people begin inquiring for honey. At our last little county meeting, one of our city backlot beekeepers remarked that her neighbors hang over her fence, asking for honey. "Got any honey?" one of them asked one evening. "Not to sell," was the answer. "Well, will you have some tomorrow?" she persisted—"just exactly as if she were asking for eggs," the backlotter concluded, "for she seemed to think I gathered a little every day."

* * *

Not having seen Dr. Phillips' article in the May Scientific American, I was greatly interested in the excerpt quoted in the July Gleanings, page 430. I have sometimes wondered if we tend more towards increasing the number of beekeepers than towards raising the standards of beekeeping. In giving an address on bee culture recently before the School of Rural Life at Peabody College, where quite a good many of the students were training with the hope of becoming county agents, I tried hard to impress the idea that poor beekeeping was worse than none at all, always dragging down the industry and the state wherein it was allowed. And so much insistence did I put on the necessity of reading and study and conscientious intelligent work that one young lady told me afterwards that I had scared her out of her idea of some day keeping bees! Now that was certainly bad work on my part; yet after all, if she really isn't willing to study and read and work intelligently and hard, maybe it is just as well for Tennessee beekeeping that she did get scared out.

* * *

Of course it is among the side-line beekeepers that those are to be found that need to take to themselves the advice to sell out to good beekeepers, or become good ones themselves. The men who are depending upon their bees for a living will surely give them good attention. Those who are keeping them only as a pleasant side line may do so, if not for ambitious or business reasons, then perhaps for the sheer love of it. But there is another class, made up of those who think it a good idea to have a few bees just to get a little honey for their families. Their real work is something entirely different, and it is there they put their thought and study and effort—if anywhere.

The bees may swarm merrily at will or be weakened by disease or attacked by bee moth or left to starve. They may become a real menace to progressive beekeepers. Or if nothing disastrous occurs, they may simply not be living up to their own possibilities. That is a serious thing, in bees or beekeepers either, failing to live up to their possibilities.

Whatever a colony of bees is capable of producing in a given location, in a given season, that it should produce. Anything short of that achievement is relative failure. And as we can't very well upbraid the bees, we must turn to their keepers. I wish every side-line reader of Gleanings, who has not already done so, would graduate this very summer from the class that says, "Yes, I've got a few hives of bees—they don't do much good, tho—they swarm a lot and all, but somehow they don't do much good—weevils get in 'em, I guess—no, I don't bother with 'em much—just rob 'em once in a while. They don't do much good."

One beekeeper told us this spring he had had two colonies four years and had produced 25 or 30 pounds of honey, all told. We bought his bees.

Even if our living doesn't depend on it, we ought to be as good side liners as we can. Especially in these days. With sugar conditions as they are, every beekeeper, tho he owns but one colony, should work hard to make every bee work hard to get every possible drop of nectar stored in a honey cell and ripened. This means not only study, but well-directed study; not only work, but systematized work. More and more I become impressed with that fact. We can work tremendously and yet fail to accomplish what could have been done with less actual labor, if there had been just a little more method—or perhaps a great deal more.

* * *

IN MEMORIAM:

G. M. DOOLITTLE.

What unimagined things you may have found!
What sudden, unguessed beauty all around!
Ah tell us, are your dreams in blossom there?
And is there eager radiance in the air,
And surge of glory hinted us of old—
That more than half that never has been told?
And is there something tender there and sweet,
And very satisfying and complete?
And do you walk unwearied those high ways
That God has walked thru immemorial days,
And drink great joys that thrill you thru and thru
And leave no sadness at the heart of you?

Thru grievous days or glad the bees will hum,
Yet you, who loved their murmur, will not come.
Why should you come? Why should you come, O friend,
From things unending back to things that end,
And things that hurt, and dreams that come not true
Altho their dreaming thrills us thru and thru?
But sometimes when our bees take fearless flight
Across great summer floods of golden light
To where some distant beauty breaks in flower,
And earth seems perfect thru one perfect hour,
These wings shall somehow make us think of you,
And we shall smile, and know God's dreams come true.



FROM NORTH, EAST, WEST AND SOUTH



In Northern California—Crop conditions, on the whole, are favorable. Extracting in the valleys started two or three weeks earlier than last season. The president of the Central Valley Honey Producers' Co-operative Exchange, J. H. Flory, reports that he has his first car of honey for this season. Mr. Flory's car is the first received by this local exchange, and it will be marketed thru our state exchange.

Northern California has three of the ten local exchanges organized in the State. They are the following: Southern Valley Honey Producers' Co-operative Exchange which embraces the counties of Kern, Kings, Tulare, Fresno, and Madera. The directors are W. E. Pilkington of Hanford, L. C. McCubbin of Fresno, F. D. Lowe of Bakersfield, C. W. Tompkins of Tulare, and R. H. Ellithorpe of Fresno. Mr. Pilkington is president and Mr. Ellithorpe secretary. The counties directly north of the above mentioned exchange; namely, Merced, Stanislaus, San Joaquin, and counties east, cover the territory handled by the Central Valley Honey Producers' Co-operative Exchange. J. H. Flory of Dos Palos, W. W. Thompson of Dos Palos, H. E. Wolfe of Stockton, Willis Lynch of Stockton, and M. C. Richter of Modesto are the directors. The president and secretary are, respectively, J. H. Flory and Willis Lynch. The Superior California Honey Producers' Co-operative Exchange takes in all counties north of San Joaquin. The directors of this exchange are B. B. Hogaboom of Elk Grove, J. R. Case of Chico, Harry K. Hill of Willows, Oliver Parks of Davis, and L. D. Walker of Sacramento. Mr. Hogaboom is president and Mr. Hill secretary. Any beekeepers who are interested in our organization work and who are not already members of the above exchanges are invited to write to the secretaries of the locals wherein they are situated. Our local secretaries will be glad to give information pertaining to their exchanges. There is yet another local exchange to be organized in our section of the State. It will cover the territory of Monterey, Santa Cruz, and adjoining counties. Our campaign work in this district will start sometime during the fall.

On June 26 the promotion committee completed its work on organization. On that date there met in San Francisco the members of the promotion committee and duly elected delegates representing the already organized locals. In accordance with the agreement, which the promotion committee has had circulated thruout the State, this body decided that its campaign work had been successful, inasmuch as six local exchanges had been organized and that 60,000 colonies of bees had been signed up. (As a matter of fact 10 local exchanges are now

incorporated and approximately 80,000 colonies of bees are represented on the marketing agreement). The delegates of the local exchanges met next and proceeded to formulate a plan for the organization of the California Honey Producers' Co-operative Exchange. From among their number they chose a board of six directors and the State Market Commissioner selected the seventh director. The directors chosen were J. D. Bixby of Covina, M. C. Richter of Modesto, W. A. Tricky of Laws, Chas. B. Justice of Alpine, Oliver Parks of Davis, Wm. Gunterman of Calxico, and Colonel Harris Weinstock, the latter having named himself temporarily to the position. The temporary officers are: J. D. Bixby, president; Chas. B. Justice, vice president; and M. C. Richter, secretary; the executive committee consists of Messrs. Tricky, Richter, and the appointee of the state market commissioner, who is yet to be named. A. B. Massey has been selected as general manager of the State Exchange and the office of the Exchange is in the Union Terminal Building in Los Angeles. Within a short time the State Exchange will be in a position to handle the 1918 crop of its members.

Honey prices within the last month have not materially changed, and the demand for our honey continues to be very active. It is principally for export, and, despite the fact that shipping space is hard to procure, it is nevertheless true that a considerable quantity of honey is going abroad. It is interesting to note that the British food ministry is considering the rationing of jam owing to the partial failure of the fruit crops in Great Britain. This condition would greatly stimulate the exportation of honey. Furthermore, the War Trade Board has come to an agreement with Norway that, under certain conditions, the Norwegian Wholesale Grocers' Association is permitted to import honey from the United States.

M. C. Richter.

Modesto, Calif.

* * *

In Southern California—Many beekeepers, whose bees were slow in building up and were scarcely ready for the beginning of the orange-honey flow, found them in excellent condition at its close. Those who moved directly to the white sage after the orange blossoms were gone, have met with fine success and got good results from that source. Reports of from 40 to 50 pounds per colony from the white sage alone are not at all uncommon. In years past it has proved a very uncertain yielder on the southern California ranges, but this was one of the seasons when it furnished honey abundantly. The buckwheat is just beginning to yield a little honey. From my experience these snow-white clusters of bloom must



FROM NORTH, EAST, WEST AND SOUTH



turn a trifle brown before they are ready to give up much nectar. In most sections, there is a good healthy growth and an abundance of bloom. The prospects are, therefore, good, at least for one extracting. The sumac, which is scattered all over the Coast Range of mountains of southern California, and blooms the latter part of June and the early part of July, looks fine. But the uncertainty of this plant makes many beekeepers consider themselves lucky, indeed, if the bees fill up for the winter from this source. These are the last of the wild shrubs to furnish honey of any considerable amount in the uncultivated sections of the southern part of the State. It is too early yet to say what the blue-curl will do. This plant grows most successfully on the cultivated fields and comes up just after the grain has been cut. In some sections it yields considerable honey and continues to bloom until the rain comes or a frost kills it. It is a drouth plant and rain seems to be its ruin.

That section of the country along the Colorado River, near Yuma, Ariz., where the mesquite usually furnishes a great early honey flow, has not made the usual crop. High winds during the blossoming period are held responsible for much of the trouble. In those parts where they also have the palo verde and alfalfa, they still hope for at least half a crop. This includes the extreme eastern part of Riverside County and lies along the Colorado River. It has much the same climate and soil conditions as the Imperial Valley. However, the Imperial County beekeepers will fare better and are getting a fairly good crop, but they have no hopes of getting anything like the old-time bumper crop when yields of 250 to 350 pounds per colony were not unknown. Inyo County, the great comb-honey district of California, promises a good crop. The southern end of the valley is about three or four weeks earlier than the northern part. While the apiarists of the northern end of the county are just beginning to put on supers, some beekeepers in the southern part have them stacked four and five supers high.

After several picnics and "get-together" meetings, the beekeepers of San Bernardino and Riverside Counties have organized themselves into the Orange Belt Co-operative Honey Producers' Exchange with headquarters at Riverside. The following are the officers of the exchange: H. A. Wagner, Redlands, president; J. A. Mack, Bloomington, vice-president; E. W. Horne, 1551 Victoria Ave., Riverside, secretary and manager; R. Powell, Riverside, treasurer; L. L. Andrews, Corona, director. Wagner and Andrews were elected delegates to attend the meeting at San Francisco for the formation of a state exchange. Ten district exchanges have been organized thru-

out the State, with nearly 100,000 colonies signed up. Imperial County exchange signed up about 95 per cent of the colonies; San Diego County, about 15,000 colonies; and Orange County has a good membership. Los Angeles County has a good start for a successful exchange. Inyo and the south coast counties also have excellent organizations. The state exchange was organized and Los Angeles chosen as the principal place of business. Details are being worked out by a directorate of six beekeepers selected from the various parts of the State. It is not certain yet whether the Exchange will be in a position to handle the honey crop this year or not. There is no doubt but that by next season we will be able to buy supplies for the beekeeper at a good saving over the retail prices. We will also be able to sell the honey of members of the Exchange for as much as the commission men do, thereby helping the members, and still not having the product cost the consumer any more than it does now. Poultry men, almond-growers, peach, walnut, prune, apricot and orange-growers of southern California have successful exchanges—and why not the beekeepers?

Honey prices are firm and buyers are offering as high as 18½ cents per pound for light amber and 21 cents or more per pound for white honey. Buyers seem willing to take any quantity of the darker shades, but a car at a time seems to be the way they are buying the white. An order that came to the secretary for 100 tons of amber honey will undoubtedly be filled by the boys of the Imperial Valley. They said they would have no trouble in filling this order with light-amber alfalfa honey at a price of from 18 to 18½ cents per pound.

The value placed in Florida on having bees near the grapefruit trees is a fact that all of the beekeepers should try to impress upon the minds of citrus and deciduous fruit-growers. Each year it becomes more and more difficult to secure locations near the orange groves. If Florida people realize the value of bees placed near their groves during the blooming period, why can we not have the California fruit-growers do the same? Yet we find many who still question their usefulness in the fertilization of the navel orange. In talking with grove owners, I find many who say that they saw very few bees on the orange blossoms this year. This must have been on account of the profusion of blossoms and the abundance of nectar in each blossom. Even with so many blossoms, a great number of localities will have considerably less than a normal crop of oranges for next season. I sometimes wonder if there were not enough bees to pollinate such a quantity of flowers.

Corona, Calif.

L. L. Andrews.



FROM NORTH, EAST, WEST AND SOUTH



In Iowa—The bees are not making much headway in Iowa this far this season. Too much cool weather, along with heavy showers, keeping them indoors so much that many are still feeding a little. Not much swarming so far, and in some apiaries none at all. The basswood bloom is over, but white clover is in fine condition. We are expecting fine results from it.

If you Iowa beekeepers ever expect to receive a respectable price for your honey crops, for goodness sake, wake up to some business sense. Organize yourselves for self-protection in the honey market, the same as other producers do in their lines. The fruit men are organized, so are the meat men, the groccymen, etc. Now when State Apiarist F. Eric Millen comes to your county to hold a beekeepers' meeting, be sure to attend, and also have your bee neighbors present. Then organize a county association and make it a branch of the Iowa Beekeepers' Association. If you don't organize, you will never count for much in the honey business, especially when you will allow a traveling buyer to come to you and name the price at which you must sell if you ever get rid of your honey.

Dr. A. F. Bonney of Buck Grove asks why not have the annual meeting of the Iowa Beekeepers' Association in November instead of December. He believes, and so do I, that it would be more convenient for the beemen in general. Now is also a good time to arrange the chain of state association meeting dates, so that the editors of bee journals and other prominent beemen could attend a number, if not all, of them, to the great delight of the many who would never be able to meet them in any other way. Such meetings would lead to a better understanding of each other.

Marshalltown, Ia. Hamlin B. Miller.

* * *

In Michigan—This is none too early, in a region as far north as Michigan, to make plans for the successful wintering of the bees. If bees are to be wintered outside, there is no protection equal to that afforded by good packing cases. Plans for good two-colony packing cases will be furnished free to those who apply to the State Inspector of Apiaries, East Lansing, Mich.

The beekeepers of Oakland and Gratiot Counties were favored with a visit from E. R. Root and family on the occasion of the field meetings of the two counties in June. This is another example of the benefit of county organizations, for, without them, very few of the beekeepers of those counties would have had the pleasure of meeting Mr. Root.

Beekeepers who apply for sugar for feeding this fall will be asked some rather point-

ed questions as to whether or not a crop of honey was secured, extracted, and sold instead of combs of honey being saved for feeding. It might seem like good business to some to sell honey at the present price and replace it with sugar at about nine cents per pound. If the affidavit discloses that the beekeeper has figured on doing this there is grave doubt as to whether or not, under such circumstances, the Food Administrator will issue a permit for buying sugar. In saving combs of honey for feeding, be sure that they come from healthy colonies.

The date of the annual meeting of the State Beekeepers' Association has been fixed for Dec. 10, 11, 12. The place of meeting will be Battle Creek. A very good program is being arranged, and complete programs will be mailed upon request as soon as issued. Many of the county associations are arranging to send delegations. Each county association should hold one or more meetings in the meantime and arrange for as large a number of its members as possible to attend. In a business way it will pay to come, as some questions of very vital importance will be discussed and the course of action decided upon. B. F. Kindig.

East Lansing, Mich.

* * *

In Ontario—We are living in abnormal times, and the weather during the past few months here in Ontario has been quite in keeping with the general condition of affairs. June was unseasonably cool during most of the month, and the first day of July was more like October than summer time, as an overcoat was quite in order when driving. A light frost came in some few places on the morning of July 2, but since then we have had weather a bit more seasonable. During the past few weeks rainfall has been abundant in most parts of the country, and at date of writing (July 5) clover, both white and alsike, is quite plentiful in most localities and very abundant in many places. Little nectar was gathered during June, and while there is a fair flow on just now, clover is quite advanced; and, as before stated in these columns, in many apiaries the bees are sadly depleted in numbers, and what colonies are left are in many instances in none too good condition to take advantage of the flow, be it light or heavy.

Inquiries are frequent for honey from both retail and wholesale sources, but so far I have heard of no prices being quoted or any honey offered. In our locality, at least, it will be two weeks before any honey will be extracted, judging by present outlook.

Wherever I have examined the basswoods, prospects are for a very light bloom, so it does not look as if there would be much honey from that source this season. However, it is a very uncertain yielder of late



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years even where trees are still fairly abundant, so it is not counted on very much any more in most parts of Ontario.

While I have no idea as to condition in the Province at large in regard to prospects for buckwheat, in our own locality the heaviest acreage ever grown is being sown. The grain has gone into the ground in an ideal condition, as soil worked up well, and frequent rains insure quick germination of the seed. A buckwheat flow in August makes things splendid for building up nuclei that have been made to make up losses, or for increase; for if the nucleus is formed during clover flow with a comb or two of brood and queen, it is very easy to draw brood from strong colonies in August, when buckwheat is yielding, to make up these little colonies to full strength. Possibly, that system works out about the cheapest and most simple of any plan known for making increase—at least I prefer it to any other way I have ever tried, and at present I have a number of nuclei formed for just that purpose.

This so-called "disappearing disease" is certainly a mystery in so far as we have any positive knowledge as to what causes the malady. During a warm, dry spell in May this year, it appeared in many apiaries, doing a lot of damage at a time when the adult bees were badly needed to keep up strength in colonies none too strong after the severe winter. Then it stopped just as suddenly as it first started. Locally we saw nothing more of it till about a week ago, when I walked into one of our apiaries one morning and found the ground literally covered with bees frantically traveling in every direction. A visit to another apiary in the afternoon showed clusters of dead bees in every little hollow in the ground, showing that the same trouble had been there also. I saw nothing since till this morning, when I again noticed a lot of bees acting the same way. The weather has been warm and no rain for a week, with honey coming in from clover. If food causes this trouble as claimed by many, how can we reconcile that idea when bees are getting fresh honey and pollen from clover? We may know a little about this disease, but, certainly, what is not known about it is by far the larger quantity.

Markham, Ont.

J. L. Byer.

In Texas—It is a matter of considerable wonder how well so many of the beekeepers really do make out. The impressions of this State were well summed up recently by one in a position to state, as follows: "If you are doing so well with present methods, what could you do with good practices?" So many beekeepers of this State are just keeping bees and getting what they can. The ability to recognize the brood diseases of bees is lacking with a very

great percentage of the beekeepers. No wonder beekeeping is not in any better standing than it is, and no wonder so many can not make money at it. It would seem to be the proper order of things to learn something about the pitfalls of beekeeping before investing much capital. Any beekeeper who pretends to keep bees, should be able to diagnose American foul brood as a matter of self-protection. After the bees have been lost, there is no time to begin to inquire into the details of how it looks and how it acts. Only the beekeeper is to blame for the present standard of industry.

The beekeeper is often forced to explain at length that bees really made the honey he is offering for sale, and that honey is really a fit food for human consumption. When one sees some of the packages of honey put on local markets, it is evident that the consumer has reason for questions. It is a matter of no surprise that syrup is preferred in many sections. Fermented honey is often placed on the market, and such a practice makes future sales of honey very difficult even for a good product. Many who sell honey do not know just the proper honey to put on the market, and then there are many who innocently put in unsealed and unripe honey. Furthermore, many are careless and allow pollen and broken parts of the bees to remain in the honey sold on the market. Such practice will ruin a good market. Much honey is purchased by the dealers from parties unknown, and the containers have no standard label, so that if the contents are unsatisfactory, it is difficult to get the poor goods replaced. This is a day of fancy markets, and the beekeeper must come to realize that fact. The consumer demands a first-class product put up in first-class manner.

The Extension Service at A. & M. College expects to do considerable extension work in apiculture during the coming year. The beekeepers will certainly welcome this announcement. There is a big field for the work in this State and there is no doubt but that decided results can be obtained. The work will be started with the smaller beekeepers and in those sections where the industry is not developed at present, but where conditions are favorable to beekeeping with modern methods.

The shippers of pound packages of bees have had a very difficult season. The drouth reduced the honey flow so that the bees could not build up. The season was equally unfavorable for queen-breeding.

Conditions over the State have generally improved during the past month. In some sections prospects now are quite good for a honey flow. During the last week, local rains have occurred over much of the honey-producing territory. In much of the mesquite section, there has been a good second



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flow this year. However, along the northern limit of the range of this plant, this flow was very much reduced by drouth. In some localities in the central part of the State the extreme drouth has reduced the honey flow to the minimum. Wherever rains have occurred thruout the cotton belt, the prospects are very good for a honey crop. In the eastern part of the State the conditions are dependent on local rains and consequently are variable. Thruout north Texas the prospects are very good and the bees are now in good condition. F. B. Paddock.

In Florida—About a year ago a Tampa beekeeper called attention to a plant on which he found the bees working heavily near St. Petersburg. He secured some of the seeds and planted them at one of his yards, and he now has a fine patch in full bloom and alive with bees. It now develops that this plant is the yellow sweet clover, and the fact that this variety of clover will thrive in Florida soil should be of interest to all beekeepers, as it may open up another valuable source of nectar. My informant states that a friend engaged in the cattle business will plant 40 acres to yellow sweet clover next year. I believe small quantities of seed can be procured from the Kilgore Seed Co. of Plant City, Fla. Probably "flatwoods" land will be found the most suitable for this variety, as it requires plenty of moisture.

South Florida seems to have been especially favored this year so far as honey production is concerned. Reports continue to come in of bumper crops of saw palmetto honey,

and, from the far south, of heavy yields from mangrove. Apiaries situated near tidewater have had a fine crop from mangrove, which, this year, has bloomed from April to July. Some beemen are wondering why the representative of one of the largest honey-buying concerns is only offering 17 cents for mangrove honey at the time when he is paying 20 cents for palmetto. It has been stated repeatedly that mangrove is one of the best honeys that Florida produces, and yet we are asked to sell it at a discount of 3 cents per pound. Can the editor explain this? [We cannot, except that honey-buyers are not always consistent nor liberal.—Editor.]

Today, July 5, the bees are working heavily on orange bloom—or, to be more correct, grapefruit bloom. And it is not a scattering bloom either, for the trees are as white as they ever were during a spring bloom. The grapefruit trees did not bloom at all in the spring, nor did they in May, when we usually expect more or less bloom; but now in July they are putting out a big bloom, and the honey is going into the supers. Cabbage palmetto has begun to yield, and in the swamp yards considerable is coming in. There will be splendid cabbage bloom in this section, too reports from further south speak of a poor prospect. If weather conditions are just right, we should make a good crop from this source. There is, however, such a thing as a big bloom but little or no honey, and the cabbage palmetto is one of the trees that often disappoints us in this respect. Given weather just right it yields profusely; but if it is too wet or too dry, the biggest bloom will amount to nothing.

Harry Hewitt.



Apiary of the president of the National Beekeepers' Association at Fillion, Mich.

HEADS OF GRAIN

FROM

DIFFERENT FIELDS



Ding Dong Bell!
Foul brood in this cell!
Who put it in?
Some careless keeper's sin.
Who'll get it out?
The Inspector will, no doubt,
What a poor beekeeper he,
Who has foul brood
in such a degree!



George Porgie, pudding and pie
Shook the bees to make them fly!
When the bees came out to sting
George Porgie,
100, took wing



How to Beat the Mice and Ants.

To those that are bothered with ants and mice I will give my remedy. I build benches and set my hives on them and keep the ground beneath them scraped clean. On the legs of the bench, about three-fourth of the way up, I put a band of tree tangle-foot, three or four inches in width, which will keep ants and mice off for a long time without renewing.

Virgil, Kan.

John Thornton.

Another Way of Uniting Colonies.

I have found it an easy and simple way to unite colonies as follows: Toward evening, I take the cover off the colony which is going to remain on its stand, and put a queen-excluder on top, leaving the colony open for one-half hour. Then I take the excluder away and put one sheet of newspaper in its place, making a hole of one-half inch in the middle. I then place the other colony on top. In the morning the sheet of newspaper can be found in front of the hive in a thousand scraps, and not a single bee hurt.

E. Uyldert.

New Brunswick, N. J.

Ventilation-at-the-Top Plan.

I have tried a way of giving my bees some ventilation at the top of the hive, which has worked very successfully. I make a frame the size of the hive,

tack wire screen over it, and place it on the top super with the cover-board removed. The ends of the screen frame are about $\frac{3}{8}$ inch thicker than the side pieces on one side, and I put the screen on with that side up, so that when the cover-board is on the screen there is a $\frac{3}{8}$ -inch air space on two sides lengthwise of the super.

I first tried this plan on a hive on the front of which the bees were clustered out. They soon were nearly all inside, and I noticed they did not cluster out any more. So I put some on other hives, with the same results. I believe it will also keep down, to some extent, the desire to swarm. I am going to leave those screens on during the hot-weather season.

J. A. Bryant.

Waverly, Va.

Disinfecting Hives and Supers.

A great many beekeepers are fearful about using hives and equipment that have been occupied by bees that have had foul brood. Of course, they are used more or less—more now than formerly. Some beekeepers may be very thorough in the way they disinfect, (by burning or scorching until charred, which leaves the hives in a very dirty condition) and even then leave some undestroyed culture or germ in the rabbets or crevices. I think a sure and complete job can be made by baking the hives and equipments in a solar oven. A hotbed sash or two placed over a light box slightly tilted will complete at small cost an oven large enough to hold several hives. The scorching, hot air will very soon permeate every crevice and destroy every culture or germ without injuring the hives or supers in the least.

A. C. Gilbert.

East Avon, N. Y.

The Screen in the Uncapping-Barrel.

For years I have been using an uncapping-barrel similar to, yet better than the one described in the April issue of Gleanings. After trying different depths I have found that the wire screen tacked six inches from the bottom gives the best results, since it allows the honey to float the cappings above the screen. After mashing the cappings the honey drains as thru a filter without clogging; but when it is put midway up, it clogs and refuses to drain. When the barrel is one-fourth full, and again when it is half full of cappings, I stir and mash up thoroughly with a flat wooden paddle. When the barrel is full I draw off a portion and continue to uncapp until the work is finished. If you are going to uncapp from day to day, do not uncapp on the previous day's work, but take it out. After the day's work is over, put back the cappings from the preceding day and allow them to drain until they become dry. A

HEADS OF GRAIN FROM DIFFERENT FIELDS

container should be placed to catch the drained honey. I have had as much as one and one-half barrels a day go thru this uncapping-barrel, without the least trouble.

Medina, O.

J. E. Thompson.

Friction-top Pail the Best Container. I do not agree with the idea that extracted honey should be sold in glass bottles to any great extent. To strive for a trade in fancy bottles of individual design seems to be directly counter to sound principles of merchandising, since in such sales the container and its packing must cost more than its contents. Manufacturers of syrups that sell at the price of honey or a little less are not so foolish. Nor do I think that selling in 60-pound cans is efficient marketing. My experience convinces me that there is an unlimited sale for honey in 10-pound friction-top pails, with a small percentage of fives and perhaps twos, and that at extracting time a slight addition to the work of preparing for market will enable careful producers to furnish honey in carload lots in such containers to the entire satisfaction of the trade. Such a net saving in useless expense could not be less than two cents per pound.

Harrison H. Brown.

Laplata, N. M.

Double or Single-Walled-Hive?

At least in the vicinity of Albany, N. Y.,

I think the desire on the part of many of our beekeepers to use the cheapest single-walled hive is a big mistake. The double-walled hive is much better for the bees, either summer or winter. A boiling-hot July sun shining on a single-walled hive will sometimes melt the combs down in spite of all the ventilation the bees can make. With the double-walled hive, combs will not melt down, and it probably requires less work for the bees in providing ventilation—and ventilation work is not making honey. Shade? It is not always possible to have the natural kind, and for artificial shade the double-walled fills the bill better than any other kind. For wintering, if outdoors, the superiority of the double-walled hive is not disputed; and if to this advantage be added a third wall or interior case to hold frames on end and packing used, bees will winter in very good shape.

O. F. Rowland.

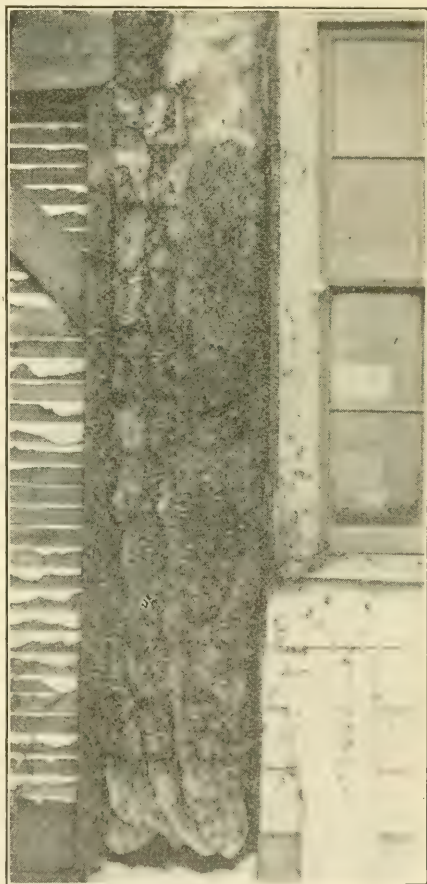
Albany, N. Y.

Bees in the Wall of a Building.

Very much more frequently than one would think, this question is asked: "How can a colony of bees

be removed from inside the wall of a building where they have taken up their home?" Not long ago Gleanings received in one mail four such inquiries, showing that the bees very much like quarters between the partitions of a building. Accordingly some general directions for getting bees "from out of in between" seem to be in order.

If it is at all possible to remove the combs, the transferring may be done according to the usual method of transferring from box hives. In case the bees are in an inaccessible place it would be very easy to remove the bees, but to remove the queen also would be quite another proposition. To remove the bees, attach a bee-escape to their entrance so that they may escape from their home but be unable to return. Place near their entrance a small nucleus. If the two



Colony of bees taken from the wall of a house by C. R. Zimmerman, Swanton, Ohio. The width of the space occupied was 14 inches, and the length of the comb was seven feet, two inches.

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FROM

DIFFERENT FIELDS

entrances are placed very near each other, then when the bees find it impossible to return to their old home, they will readily enter the new one. The queen and few remaining bees in the wall may be killed by putting sulphur in the smoker and blowing the fumes of it into the opening. It might be possible to obtain the queen with the bees, if it were possible to blow smoke onto the combs from the side opposite the entrance. Unless the combs were removed from the wall, the only way you could be certain of getting the queen would be to wait until they swarm and then hive the swarm. In this case you would have the old colony still in the wall unless they too were sulphured as above suggested. If it is desired to place the colony in a different part of the yard, it should be moved a short distance several successive times—perhaps moving but a foot the first day and then later gradually increasing the distances. If moved too far at one time, the bees will be unable to find their hive.

Uniting, and the Disappearing Disease.

In regard to your article, page 829, on uniting weak colonies in the autumn, I will say

that, if one of the queens is removed three days before the colonies are united, you need not cage the remaining queen nor use paper between the hives. Simply place the queenless hive under the other, and the work will be done. Or, smoke both colonies, remove all the combs but four or five of the heaviest ones from each hive, and carry the queenless bees and combs to the queen-right one, alternating the combs and bees. Do this in the evening, and all will be well in the morning, with no retiring bees.

We had our second installment of the disappearing disease this last summer, reducing the surplus honey to about 15 lbs. per colony. Mildew on the flowers, induced by the wet weather, seems to be the cause of the disease—at least dry weather soon effected a change in the death-rate.

North Toronto, Can F. P. CLARE.



THE BACK LOT BUZZER.
Speaking of European foul brood, why not?

THE first price recommendations for 1918 of the Chicago - Northwestern Beekeepers' Association are important, as affecting the market price as well as establishing uniformity in price. These honey-price recommendations (date of July 20) are as follows: Extracted, wholesale, 23 to 25 cents; retail, 5 to 10 cents per pound higher according to size of package and method of selling. Comb honey, wholesale, 30 cents per pound; retail, 5 to 10 cents higher. These recommendations are accompanied by the statement that the honey crop generally is shorter than that of last year.



every day in the year. A central extracting plant is to be established for about every 5,000 colonies, and Ford trucks will be used for transportation.

Honey-Crop Prospects.

Reviewing the honey-crop situation throughout the whole country, an approximately correct summarization of conditions would be as follows: California, when the crop has been fully harvested, will be at least fair; crop of the Rocky Mountain States very good; Texas crop considerably better than last year; Florida crop one of the best in years; crop of the Mississippi Valley and Eastern States generally much below the average.

A field meeting of the New Jersey Beekeepers' Association will be held at O. N. Whitaker's apiary, at Branchville, Suffolk County, on Aug. 9, beginning at 10 a. m.

The Eastern Massachusetts Society, in conjunction with the Massachusetts State Association, will hold a field day on Saturday, Aug. 17, at the Norfolk County Agricultural School (Plymptonville R. R. station.)

There will be a beekeepers' picnic and meeting of the New York State Association of Beekeepers' Societies on Aug. 2, at Hayts Corners, the summer home and apiary of C. B. Howard, president of the Societies. An exceptionally good program has been prepared for this event.

A field meeting of the Ohio Beekeepers' Association will be held with the A. I. Root Company at Medina on Thursday, Aug. 15. Every beekeeper who can possibly reach Medina on the day of this field meet is cordially invited, and an effort will be made to entertain them royally.

Prof. Geo. A. Coleman, Apiculturist, Department of Entomology, University of California, sends notice of the organization of the "Western Bee Farms Corporation" with a capital stock of \$100,000, a large part of which is already paid up. The Bee Farms will be chiefly located in Santa Cruz and Monterey Counties. The apicultural director will have charge of the selection of sites and general scientific management. One or more queen-breeding yards will be established and careful records kept of the performance of each queen and her progeny. A weather station is to be established at each bee-yard and a central station at the queen-rearing yard fully equipped with automatic instruments for the recording and study of weather conditions as affecting queen-rearing and the work of each apiary

Inquiries sent out to prominent beekeepers in various parts of the country have brought us the following condensed answers: Colorado, possibly a little above the average crop; Idaho, prospects good for average crop or better, with quality all water-white with excellent flavor; Oregon, fair average yield, mountain districts good yield; Utah a full honey crop in prospect; Iowa, amount of crop doubtful; Illinois, white-clover honey flow fairly good with prospects for a fall flow as good as last year; Wisconsin, weather conditions for honey gathering exceedingly bad during almost all of clover bloom and basswood, crop generally reported very small; Minnesota, weather conditions generally bad during honey-flow period, combined with heavy losses of bees, have resulted in small crop; Kentucky, crop about 50 per cent of last year; Michigan, northern part of the State generally will have a poor crop altho there are local exceptions, a good crop in the central part of the State, average per colony in the southern part of the State 40 pounds; New York State, weather generally unfavorable during honey flow, which, with only about one-half of a normal yield of honey combined with a winter loss of about 50 per cent of the bees, makes the crop for the State about 25 per cent normal, but the buckwheat acreage is large and a considerable crop may be expected from it (basswood making a good yield the middle of July and so increasing the crop materially in places); Pennsylvania, number of colonies abnormally low because of winterkilling, but honey flow excellent and prospect for buckwheat crop much better than usual; New Jersey, crop very small on account of small spring colonies and very unfavorable gathering weather; New England, clover conditions excellent but weather conditions very poor, with prospects of a comparatively small crop in most places; Ontario, crop will be light as a whole, altho very excellent crops are reported from scattered places.

QUESTION.—

Last winter we lost 17 out of 81 colonies of bees, most of them the strongest in the yard, just because we could not get sugar to feed them; and I am afraid that we shall again find our bees poorly provided with stores this fall. So I am thinking, if I could not get sugar enough to feed them this fall, I might destroy half the queens about the middle of August, to stop the increase, and double the colonies up into 40 or 45 colonies. Please advise me in regard to this plan.

C. A. Bunch.

Indiana.

Answer.—We should certainly hate to kill half the queens and double up the colonies in the way you suggest, for we believe that you will be able to obtain the sugar, altho, of course, we cannot be certain of this. In many cases 10 pounds of sugar would keep a colony from starving during the winter, if they already have some stores in their brood-chambers. Next year that same colony would probably produce 100 or 150 pounds of honey. Now, it hardly seems likely that the Government would be shortsighted enough to attempt to save 10 pounds of sugar and thereby lose 10 or 15 times as much honey. In fact, since the war began our Government has shown no such inclination, but has evinced a strong desire to help the producer to increase his output. We suggest that you fill out an application for sugar, similar to the one given on page 74 of our February issue. If you are able to save all of these colonies for next season's crop, it would clearly be a patriotic duty, since it would add so much to the world's supply of sweets.

Question.—A peculiar case took place in our apary this month. I had a colony of bees with two supers above a queen-excluder. The bees found an entrance between the top super and the cover. When I opened the hive, I found the top super with laying worker brood. I concluded that they had lost their queen, and looked in the brood-chamber where I found a perfect laying queen with brood. When I shook the bees of the top super at the entrance of the hive, they refused to go in. Please let me know if you have experienced any similar cases.

A. DuBoulay.

Soupiere Estate, South Africa.

Answer.—Bees crossed with the Syrians or Cyprians sometimes behave exactly the way you mention, having both laying workers and a queen in the same hive, and often in the same brood-chamber. We do not know why the bees refused to enter the hive. It may simply have been hot and the hive already crowded. Perhaps the bees had been smoked until they were gorged with honey and therefore logy.

Question.—In the June number of Gleanings there was given a plan for swarm control which I used, raising the old brood-chamber above the two supers with an excluder just above the new brood-chamber. Now, since the drones are closed in above and run all over the sections, I would like to know how long to keep the excluder on. And

GLEANEED BY ASKING

E. R. Root

would it be all right to take it out after the brood above hatches?

Edwin A. Wright.
Pennsylvania.

Answer.—The plan to which you refer is for the production

of extracted, and not comb honey. That is why the excluder was used, in order to prevent the queen from going above and laying in the drawn combs of the empty supers. If the supers were filled with sections of foundation, the queen would not be likely to go above even if no excluder were used. However, as just stated, the plan is not intended nor it is suitable for the production of comb honey, which requires that but a small amount of super room be given at a time, and, preferably, that this be given at the warmest part of the hive. When running for extracted honey, if it is found that the drones collect above the excluders, the supers may be lifted off, and then replaced. But unless one has an excessive amount of drone brood in the hive, this will not be necessary, for, when the hive is examined the next time, the drones would naturally fall from the excluders, and thus the matter would be remedied without the beekeeper's giving it any thought whatever.

Question.—On page 336, June Gleanings, Mr. Holtermann says: "After seven or eight days I would go thru the colony." Seven or eight days from when—Thanksgiving day or the Fourth of July? Further along he says: "A beekeeper must, however, adjust himself to conditions." * * Bees might not follow the usual rule of casting the second swarm the eighth day after the issuance of the first, etc." I do not see what bearing this has on the subject at all. If he kills the queen and removes all queen-cells but one, there would be no swarming as I understand it.

C. E. Boddy.

Minneota.

Answer.—When Mr. Holtermann said he would go thru the colony in seven or eight days he evidently had in mind the preceding sentence in which he stated that, as soon as the honey began to come in freely, the bees began to build queen-cells. Therefore he probably meant that, after queen-cells were started, in seven or eight days he killed the queen and removed every cell but one. When he said that "a beekeeper must, however, adjust himself to conditions," we believe that here he was thinking of the fact that sometimes it might be to the beekeeper's advantage to kill the queen, as he had just suggested, and in other instances it might be better to keep the queen if she seemed unusually good. Therefore it would be difficult to give any hard-and-fast rule as to the one best way to requeen. In any given instance it would be necessary to know something about the queen in question, and also weather conditions, flow of honey, etc. These factors would all have a bearing on the best way of requeening. It might be possible that rainy weather would

prevent one from going thru his colonies seven or eight days after queen-cells had started, therefore at the advent of warm weather possibly a swarm would issue and escape from him. He would then have the problem of second swarms, which Mr. Holtermann suggests; and it would hardly be wise for him to put off manipulations for eight days longer, thinking that the second swarm would not issue until eight days had elapsed, because, as he points out, under some conditions the swarm might issue in three days. Therefore if one wished to make increase from the colonies that remained after the first swarm issued, the manipulation should be made soon after the first swarm left. In regard to your last sentence, you are quite right that, if the queen is killed and all queen-cells but one removed, there would usually be no swarming.

Question.—Will you kindly publish in *Gleanings* directions for combating the bee-moth or larva? California. S. J. Paul.

Answer.—In order to prevent all trouble from the wax-moth in hives occupied by bees, it is only necessary to keep strong colonies in modern hives, and supplied with good Italian queens. All supers of combs stored in the honey-house should be piled and covered carefully so that no moth may gain access. If moths should appear in stored material, and yet the combs are not badly affected, they may be given to strong Italian colonies to clean up. If the condition is more serious, the combs will need to be fumigated. In this case, place at the top of the pile in an empty super a pan containing carbon bisulphide and leave tightly covered until the next day. The fumes when mixed with air are highly inflammable, and the fumigation should therefore be done outdoors away from the buildings. At 70 degrees F., 10 cubic feet of space requires about two ounces of carbon bisulphide for complete saturation. This kills everything except the eggs. In about 12 days when the eggs hatch another fumigation will be necessary. In estimating the amount of bisulphide needed, it should be remembered that the empty combs occupy a part of the super space, and, if filled with honey, they probably take up as much as two-thirds of the space.

ANSWERS BY C. C. MILLER

Questions.—(1) In queenless and in supersede colonies I have not been able to get more than one cell accepted, altho I have tried eggs, different ages of larvæ (with and without jelly), and also have given the cups to the bees to polish previously. What is the explanation? (2) Under what conditions will queenless colonies tear down a ripe cell on a frame of brood? I can not succeed without putting the cell in a West protector. (3) My best colony in 1916 proved worthless the following season. It had the same queen, but dwindled to about three broods, and we have had a couple of inches of dead bees around the entrance all summer. The larvæ appeared to be all right, but something fished the trouble with the old bees. F. O. Minnesota.

Answers.—(1) Hard to say, but it is possible that you had too small a force of bees. The whole force of a strong colony is none too much to prepare cells of best quality. You

may not have had a sufficient proportion of young bees. The weather and pasturage may have had something to do with it. Feeding will help, but it is better to have a good flow of nectar. A good thing is to use the bees of a colony that has of its own accord begun to rear cells for swarming. Possibly you might do better to try the plan of having cells built on a comb lying flat. A good deal was said about this a few years ago, but it seems not to have come into general use. I have tried it a few times with satisfaction. Fill a hive with empty combs, or combs nearly empty. On these lay flat a comb of brood from your best queen, the comb supported by sticks so that there shall be about an inch between the top bars and the lower surface of the comb. Over this a shallow super that shall come about half an inch higher than the upper surface of the comb. Set this hive in place of the hive of a strong colony, setting the latter on a new stand. Now shake or brush upon your flat comb the bees from three frames of your removed colony, of course making sure not to have the queen. Cover up and the field force will join the force you have brushed into the hive, and in ten days you will have a fine lot of cells that will be only on the under side, easily cut out, and leaving a much smaller hole in the comb than will be left when you cut out cells from a hanging frame. The instruction is to cut or scrape out certain rows of the cells, leaving only part of the cells. I do nothing of the kind; just leave the perfect comb, and the bees do good work. (2) Bees will tear down cells when queenless for so short a time that they have not yet discovered their queenlessness. Also, they may tear them down if queenless so long that they are thoroly reconciled to their condition of queenlessness. They are more inclined to do so in a discouraged condition, as in a time of dearth. (3) I don't know what the trouble was, but it looks a little like paralysis.

Question.—In the arrangement of the supers to prevent swarming, in the manner as shown in Fig. 68, page 195, in your book "Fifty Years Among the Bees," do you have any trouble in keeping rain out of the hives? do the bees go in and out of such openings? What time of the year do you arrange the supers in this manner and what month do you close them up again? E. F. M. Pennsylvania.

Answer.—The extracting-supers should be piled, each super shoved alternately backward and forward so as to make a ventilating space of $\frac{1}{4}$ to $\frac{1}{2}$ inch. There is nothing to prevent the rain entering these openings, but being at the ends of the hive and supers it cannot touch the brood, and I never knew harm to come from it. This extra ventilation is begun as soon as the ventilation seems needed, or about the beginning of clover bloom, and continued until the supers are removed in the fall. One might suppose the bees would use these openings for exit or entrance, but very rarely does that happen, probably because early in the season the bees had already formed the habit of using the regular entrance.

"THE difference in bees is not due to color nor to whether they have three bands or five bands. When men develop such highly refined taste for color on bees, it would be to their financial advantage if they became temporarily color-blind."—Louisa Sherman, Baldwin County, Ala.

"Bees are booming this year."—F. A. Hayes, Lycoming County, Pa.

"Glad that M. A. O. is omitted from your clean paper."—Kore A. Peachey, Mifflin County, Pa.

"Our best honey plant is cotton. Prospects are good."—Eugene Holloway, Denton County, Tex.

"It should be about an average year for beekeepers here."—J. G. Harman, San Diego County, Cal.

"Bees in poor condition and very little honey in the mountain section."—G. W. McGuire, Avery County, N. C.

"Got a crop of April honey from broad-leaved maple—the first of the kind ever."—J. W. Ware, Pierce County, Wash.

"The honey crop will be a failure, or nearly so in this part of Iowa this year."—A. B. Claus, Buena Vista County, Ia.

"Cold and rainy most of the time. Frost on June 20. Forage is good, but bees are losing time."—F. A. Carrier, Bennington County, Vt.

"The lumberman and beeman should be friendly all their lives; For one of them has shingles while the other has the hives."—Strickland Gillilan.

"Frost has just hit us hard in New England, with clover, verburnum, and elder out, but little coming in."—Robt. Elwell, Bristol County, Mass.

"Bees are doing fairly well here. Combs filled up below and are working nicely in the supers. Average yield of honey is expected."—J. W. Seybold, Nicollet County, Minn.

"California raised and shipped 500 cars of honey last season, and in Pennsylvania our possibilities are just as great."—State Apiarist Green of Department of Agriculture of Pennsylvania.

"Season a complete failure in this locality—too dry. Have not heard of a single swarm and am afraid a good many of my colonies will have to be fed for winter."—Alex. Cruikshank, Vancouver, B. C.

"Last winter was an open winter here, bees flying nearly every day. The result was consumption of more stores than common and colonies weaker in the spring than usual. Colonies had so many bees in the fall

BEES, MEN AND THINGS

(You may find it here)

after honey was taken off that they would hang out as if they intended to swarm. Colonies started from two frames of brood in August last year went

thru the winter nicely."—C. H. Ponting, Benton County, Wash.

"Honey crop to date is far below normal due to the heavy winter losses and the severe drouth which prevailed thruout May and June, doing great damage to the clovers."—C. Schoonover, Scioto County, O.

"I have 33 colonies and they are doing fine. Some have made about 75 pounds of clover honey, with basswood now in bloom and buckwheat yet to come. I expect a good crop."—A. B. McHenry, Columbia County, Pa.

"The prospect is that the bees in this country are not going to live, as it is so wet and cold that they are starving, and it will be perhaps years before I can purchase any more around here."—Walter F. Whipple, Orleans County, Vt.

"The greatest honey flow in years. First, white clover; then, red clover; and now sweet clover will hold till the fall flow comes. My loss last winter was heavy, but my colonies are now very strong."—R. L. McCoy, Spencer County, Ind.

"Last year I got 25 sections of white honey completely filled and a five-gallon crock full of chunk honey. But three bears came in one night and ate the honey, brood, and bees, leaving me one hive out of three."—G. B. Anlenbach, Jefferson County, Pa.

"I should like to inform you that as our big guns here could not determine European foul brood they have had to send samples to Dr. E. F. Phillips at Washington, who has declared European foul brood to exist in this country."—T. E. Wise, Cradock, South Africa.

"I run three bee yards, having 250 colonies in all. I have a Ford car for the out-yard, make my own foundation, requeen from my own stock, but buy new blood now and again, and do everything single handed connected with the apiaries."—C. Smedley, New Zealand.

"Our bees are established near Chico, Calif., this season, where we hope to secure a crop of honey from the yellow star thistle. It is a late-blooming flower, and the nectar flow from it has only just begun; but is said to bloom until frost stops it."—C. D. Stuart, Butte County, Calif.

"I have about 30 odd hives located in four different parishes, and so far have not seen a capped cell of 1918 honey. I am constrained to admit that my State, or, at

least this part of it, can not rank high as a honey producer. Our chief pest, the Argentine ant, can annihilate a colony within a day or two. I made about 1,500 pounds of honey last season, mostly after July, and there was practically no spring flow that year either."—Sam Houston, Orleans County, La.

"We have been properly eucheried this season by the middleman. He got the oyster and we got the shells. I do not mean myself particularly, but practically the whole fraternity was taken down."—Major Shallard, New South Wales, Australia.

"Notwithstanding the magnificent start we secured from bees in April, with weather conditions in May and June such as broke all records for dryness, the honey-crop prospect went a-glimmering. Nearly all beekeepers have moved their bees to the mountains. Reports from those districts are that fireweed is good and a fair crop promised.—E. J. Ladd, Multnomah County, Ore.

"The Food Administration regrets its use of the words 'honey manufacturers' in connection with our sugar regulations. In reply to your favor of July 6, I would like to call your attention to the fact that we have changed this to read 'beekeepers.' Beekeepers are entitled to their normal requirements of sugar, and certificates for its distribution may be obtained by applying to the Federal Food Administrator for the State in which the beekeeper does business. Please be assured that the Food Administration appreciates the co-operation it has received from the beekeepers of the country, and from such publications as yours."—U. S. Food Administration, Educational Division, in a letter to *Gleanings in Bee Culture*, dated July 9, 1918.

"At the last annual convention of this Association, \$50 was voted to make a display showing the uses of honey in canned fruits and baking, and the uses of honey in sweetening, at the next Wisconsin State Fair, Sept. 9 to 14. A part of the fund will be used in distributing receipts of same to those interested. There will also be displayed demonstrations of beekeepers' supplies at the Fair. A building has been set aside for the exhibits and demonstrations of the bees and honey department. Premiums in the bee and honey department, as offered, amount to \$149.00. N. E. France of Platteville is superintendent, and A. C. Allen of Portage is judge."—From circular letter to Wisconsin beekeepers, sent out by the Secretary of the Wisconsin State Beekeepers' Association.

"Sweet clover is a benefactor of man and should never be destroyed as a 'weed.' It is the best of our honey plants. If there were no other reason why it should be spared, that would be sufficient. But today the farmer who formerly made war on sweet clover as a nuisance is fast learning that it

is a blessing, and there is no more beneficial scientific agricultural propaganda than that which teaches the virtues of sweet clover and encourages its use. It will restore impoverished soil, redeem abandoned soil, and create good soils where there was no soil of any value before. While doing this it furnishes a crop that is excellent stock feed; it furnishes excellent honey; and with its long tap root it persists thriftily even thru the driest of unfavorable seasons. However, it is distinctly ornamental, while the fragrance of its blossoms, which gives it its name, and with which it subtly charges the air, is delightful. Tons of it have been sacrificed in Louisville the past few days in the weed-cutting crusade, for few property owners understood its value and the weed cutter when he swings his indiscriminating scythe doesn't know it from any other weed. More's the pity."—The Louisville Courier-Journal, June 26, 1918.

"Why doesn't some genius in the 'Home of the Honey Bee' produce a stingless bee? Isn't it possible to secure the assistance of Burbank for this purpose? Unfortunately my anti-sting armor has all proved vulnerable except the 'globe' veil. In a recent bee offensive something went wrong in the early stage of the operations. The battle cry evidently was passed along the line and I found myself surrounded by angry bees which stung me thru my thick trousers and thru A. I. Root's sting-proof gloves. I beat a hasty retreat to prepared positions in the cellar and called for help. These bees are intelligent—no question about that. Not a member of my family could go anywhere near the hives all day Sunday or Monday, the battle having started Saturday. The bees had an advance guard out in the driveway and succeeded in stinging several members of the family as well as the dog, two days after the main encounter in which I was the first in command. The famous Root bee-smoker had no more effect on these bees than so they had been equipped with gas masks. The general engagement was brought on by my attempting to capture a swarm, and, contrary to all A B C rules of bee culture, this particular colony from which the swarm issued had plenty of room and had produced no honey. I wish I had just 10 good, common-sense, fundamental rules for amateurs to follow to make honeybees produce honey. After reading *Gleanings* and *A B C of Bee Culture* I am simply bewildered and appear to have nothing definite in the way of fixed rules of warfare."—Corwin McDowell, President of Eastern Casualty Ins. Co., Boston, Mass. [If you would be a little more painstaking and carefully extract the bees' stingers before manipulating them, it might help some. The only stingless bees known have the cheerful habit of fastening on to the individual hairs covering one's body and pulling these out singly and in the longest-drawn-out and most painful process possible.—One of the Editors.]

THIS month is not a particularly busy one for the small beekeeper, and therefore about the only subjects that need claim our attention are requeening and robbing.

Vacation Time.

The work of extracting will probably be over by the first of August, and the first half of this month would therefore be a good time for a short vacation, which may be taken with a clear conscience as far as the bees are concerned, that is, providing instructions have been followed and all colonies kept strong.

Selling.

The subject of selling the honey hardly needs discussion since, under present conditions, honey sells itself. We only caution that a close watch be kept of the honey market and that sales be made in accordance. We are not urging excessive prices, but those somewhere near commensurate with the prices of dry goods and groceries for which the returns will be spent. The man who sells to a profiteer that doubles his money is more foolish than patriotic.

First Step in Wintering.

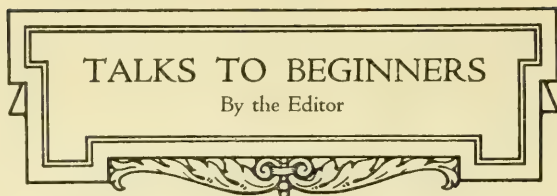
Some time during the latter part of August should be taken the first and most important step in preparation for wintering, the raising of young bees to withstand the excessive cold of winter. Unless the queens are young, we would strongly advise requeening (see page 462). Young queens introduced at this time will lay many more eggs than the older queens, and in a few weeks' time there will be considerable brood. Since the eggs will develop into field bees in five weeks' time, there will be, by October, many new field bees that will have a chance for a number of good flights before the advent of winter. The value of these fall flights can hardly be overestimated, for without them the bees are not sufficiently hardy. We have seen many such bees, apparently normal, yet doubtless lacking in vigor, being pulled out at the entrances in the late fall. This taught us the value of raising our bees a little earlier, beginning in August rather than September.

Robbing.

After the main honey flow, and especially if a heavy flow stops suddenly, the bees may often be seen scouring the whole vicinity in search of any possible exposed sweets. If the door of the honey-house has been left ajar, or if honey has accidentally been spilled on the ground, the bees are not long in discovering the fact.

Quiet Robbing.

Or, if a colony is weak, and perhaps queenless, and therefore more defenseless, black shiny robber bees, which are in many cases devoid of "feathers," may be seen enter-



tempt to gain entrance to about every hive in the apiary.

Bees at Play.

Along thru the middle of a warm day or early afternoon, many young bees may be seen at play flying all about the entrance, and making such a commotion that at first glance one might think robbing had started, but a closer observation will show no old robbers, no fighting, sneaking, nor challenging of entering bees. This unusual activity is simply the young bees taking their first flight, circling about in front of the entrance and carefully marking their location.

How Robbers Enter Hives.

When robbers are present they may be seen hovering about an entrance watching the sentinels that are stationed there to prevent intruders from entering. Suddenly a robber will dart and dash past the guards, attempting to enter; but its guilty behavior is so marked that some alert sentinel generally pounces upon it and challenges its entrance. While the sentinel holds tightly to the robber, other bees come to the rescue, and the robber is soon driven clear out of the hive, and perhaps stung to death.

Experienced robbers sometimes become very skillful in entering other hives, and seemingly assume an nonchalant air, entering as if they rightly belonged there. Such behavior usually gets them past the guards all right; but even after they are in the hive, loading up with honey, there is still a chance that they may be captured and stung by the bees.

Detecting Robbers.

Besides the high humming note of robbing bees, and the unusual commotion in front of the hive with occasional shiny bees having their entrance challenged, and perhaps two or three bees whirling about in their struggles here and there on the entrance-board, one may also detect the presence of robbers by crushing one of the bees found running up the front of the hive before taking its flight, and noting whether or not it is loaded with honey; for unless the bees were robbers or swarming bees, they would have no load when leaving.

A Bad Case of Robbing.

If the robbing is allowed to continue soon a loud, high humming is heard, and the air becomes filled with thousands of bees darting with great rapidity in straight lines to and from the source of honey. Other bees now hear the uproar, and speedily join in the mad scramble for wealth until entrances, hive-covers, and about everything in sight is covered with angry, fighting bees

curling up and stinging each other furiously; and woe to any living being that may then appear on the scene of action. It will require many gifts of honey to sweeten up the neighbors after such a fracas. And even such an inducement may be without avail, if the neighbors or their stock are badly stung.

Damage Done by Robbers.

Considerable damage may be done to an apiary by allowing robbing; for colonies that have once robbed are more likely to repeat the performance, and the next time the beekeeper may not be present.

Unless such robbing is stopped, the bottoms of many of the hives and the ground in front will be covered with dead bees and particles of wax that the bees have torn from the combs in their frenzied snatching of stolen sweets. And not only the weak colonies but also some of the strong ones may be destroyed in a few hours, every bee in such a colony being killed and every drop of honey removed. The brood, too, will probably become chilled, since there are no bees left to cover it. Thus there will result the loss of the entire colony. Should it happen that a colony is about all killed before the robbing is discovered, the bees should be shaken off and the brood distributed to other colonies in order to prevent it from becoming chilled.

To Prevent Robbing.

The greatest trouble from robbing usually occurs right after the main honey flow. For this reason we have already especially cautioned that extra care be taken when removing the honey from the hives. With the exception of the contracted entrance, every crack and crevice of the hive should be securely closed so that not one bee may gain access; and if thru accident any honey is spilled on the ground or hive, it should be diluted with water, and all traces of the honey removed before the bees can obtain a first taste of the sweets. Also, if it is necessary to remove any combs from the hive, they should be placed in an empty super and immediately covered with cloth.

As previously mentioned, the windows of the extracting-room should be screened. But a wooden instead of a screened door should be used, since the odor of the honey so readily passes thru a screened door that clouds of bees would hang about the door, only waiting a chance to dodge in.

To allow honey to drip from the lower end of a solar wax-extractor is also an easy way to start robbing.

After the combs are extracted, some beekeepers pile them six or eight high, leaving at the top and bottom only an opening large enough for the admission of one bee at a time, thus allowing the bees to rob out the honey still sticking to the combs. If no disease is present in any colonies of the neighborhood, and if only slow robbing is allowed, probably the plan would be satisfactory; but it would, perhaps, be a little safer to place the supers of sticky combs, three or

four in a place, over strong colonies that will readily clean them out. Between the combs and the brood-chamber below should be placed an escape-board having the bee-escape removed and the opening covered so that only one or two bees may pass thru at the same time. This plan usually works, tho there are occasional exceptions.

During a dearth of honey, colonies should be opened as little as possible, and not very much smoke used, as the bees are more defenseless after being smoked. All colonies should be kept supplied with a queen and brood, and all weak ones should be left with contracted entrances, and with no more combs than they can easily cover. If it is absolutely necessary to work when the bees seem inclined to rob, a cheese-cloth or netting bee-tent, just large enough to place over the hive and manipulator, may be used.

How to Stop Robbing.

Italians put up a much better defense than blacks; and, if attended to at the



This is a strong colony of bees, with its guards out in force, ready to repel any attack of robbers.

start, it is usually easy to stop robbing among Italian bees.

In mild cases of robbing, the entrances should be contracted; and over the fronts of the hives that are being robbed grass should be thrown loosely and kept dampened.

If a colony seems quite unable to defend itself, it should be placed in the cellar for a day or two, and a hive containing a small amount of honey left in its place. As soon as the robbers have used up this honey they will quiet down; while if no honey were left in the place they had been robbing from, they would begin robbing from a neighboring hive.

When only one colony is doing the robbing, perhaps about the easiest and best way of meeting the difficulty is to change places with the robbed and the robbing colonies.

I HAVE been in the habit of giving occasionally in these columns kind words from some of our readers. Once or twice I have permitted something extravagantly kind to appear. Now, to be fair I should also give place, at least once in a

while, to some of the criticisms. So far as unkind words are concerned they are very few. Along this line just two letters have been received in regard to what I said about cigarettes and testaments on page 389 of our last issue. One of the letters said that the soldiers who are offering their lives to protect our liberties and our nation "should have everything they want." I have mislaid the letter, but here comes a second one along the same line:

Mr. Root:—Noting your article in July GLEANINGS on cigarettes and testaments, I wish to say I have many times wished to be where I could have a good long talk with you—one where plain but sharp words would show you and prove to you what you really are but are not sensible of it. Those who have gone forth to fight for such as you and all others, if they want cigarettes they should have them. If they ever were entitled to them they are now; and if a man or a woman, as to that matter, is clean spiritually, cigarettes will not in any way make such impure.

But men of your caliber are always interfering and reforming almost all innocent things while upholding and practicing things thousands of times worse and not comprehending it. In fact, you are of those who strain at a gnat and swallow a camel; and your favorite diversion is showing your readers "unknowingly on your behalf," how blind, selfish, and hypocritical you are.

Perhaps at one time you were an industrious and useful producer for the world's good; but now you fail to realize that you are only a non-producing parasite, living off the toil of hireling slaves whose surplus profits above their wage you are spending on self only by playing at "intensive" gardening, electric automobiles, electric windmill generators, estates in Florida, and expensive trips back and forth—deluding yourself into believing you are doing something useful, and not being sensible of its being the contrary. And I wish to add just this much more:

That Almighty God is able to and does reach unto all the e who wishes to teach and to lead unto righteousness, and has absolutely no use for your help. There be some blind yet who cannot perceive the spiritual teachers; therefore they turn to material ones of your caliber who keep their backs always turned to the light of true godly righteousness, and following man-made doctrines which are a Babylon of confusing sects and creeds, leading the careless into everlasting darkness and sorrow because they do not seek right.

Princeton, Mo., July 3

J. F. J. SAFARIK.



Know ye not that your body is the temple of the Holy Ghost which is in you, which ye have of God, and ye are not your own?—I. COR. 6:19.

Whoso shall offend one of these little ones which believe in me, it were better for him that a millstone were hanged about his neck, and that he were drowned in the depth of the sea.—MATT. 18:6.

seems to me, both judge and jury. You say, "If they want cigarettes they should have them." Why not go on and say the same thing about "booze?" And it just occurs to me that Germany would likely fall right in with your suggestions. I can imagine that even the kaiser himself might say something like this: "Why, yes; if the boys want cigarettes, let them have them of course, and booze also, which would give them courage to fight. And right along this line why not abolish the war zone around the soldiers' encampments? Sure thing; let them have anything they want."

I wonder, friend S., if it has ever occurred to you that I have heaps of magazines and periodicals from all over our nation, constantly piled on my desk. Of course I cannot read them all; but I try to glance over them enough to keep fairly well posted up to date. I fear a good many people are getting the idea that there is something patriotic about smoking a cigarette, especially since cigarettes have been sent in such quantities to the soldiers. And speaking of patriotism reminds me of something else along this line. Quite recently when a lot of soldiers were getting off a train a crowd of women (I believe they called themselves *girls*) rushed up to kiss the soldiers, thinking it would be accepted as a patriotic act; but it was not long before the authorities put a stop to the kissing. This gang of women that wanted to kiss the soldiers were not exactly girls, and I am afraid they hardly deserve to be classed as women, notwithstanding their gaudy attire. Should we say of them, as you have just said of the cigarettes, "if the soldiers want them they should have them?" May God be praised that Uncle Sam steps in right here and objects.

The American Tobacco Co. is, of course, alive and on the alert along this same line of "patriotism"; and a magazine* that lies

*No-Tobacco Journal, Butler, Ind.

My good brother, while I thank you for wishing you could have a good long talk with me, I am a little afraid you would have to climb down a little from the high perch you seem to have chosen while you lay down the law, making yourself, as it

before me says they have advertised they are going to furnish the Government 100 carloads of tobacco. I do not know how much of this is to be used for rolling up into cigarettes; but the inference from their advertising is that the Government is going to *give* it to the soldiers. But the editor was not satisfied, and on April 23 he wrote to a member of the House of Representatives, Washington, D. C. A reply came promptly:

In no instance has the Government given the soldiers any tobacco; but they have so arranged that the men "over there" can have the American tobacco to which they are accustomed, and at a reasonable price.

Sincerely yours,

LOUIS W. FAIRFIELD,

Congressman from 12th Dist. Indiana.

A few Sundays ago at the big class in our Sunday-school in Florida our superintendent, E. B. Rood, spoke something as follows, after cautioning the boys about cigarettes:

"Can anybody tell me whether the President of the United States uses tobacco?"

As nobody seemed ready to answer he replied:

"Our good President has never used tobacco in any form. Did his predecessor in office use tobacco?"

The answer again was "No." And finally he explained that no President has used tobacco in any way or form until we get back to Grant, and it was the tobacco habit that *killed him*. He added that the probability is that very few of the men chosen for the presidential chair ever used tobacco. Is there not something significant in this? Once more:

How many of our large manufacturing concerns in the United States would give employment to a young man or boy who would come with a cigarette in his mouth? In the journal I have quoted from I find a letter from a soldier replying to the editor about cigarettes in the army. It is to the effect that a lot of the boys had broken off from the use of cigarettes just because they soon found that they interfered materially with their efficiency in drill.

Just a word about the "hireling slaves" this brother alludes to. Perhaps he will be surprised to learn that these "hireling slaves" of ours are, many of them, and I do not know but I might say *most* of them, running automobiles that cost two or three times as much as the one your friend A. I. Root uses. In fact, the one in Florida is a second-hand Victoria refinished. The one I am using (and rejoicing in) today after being refinished and refurnished thruout cost only \$300. I got it at so low a cost because they did not guarantee the batteries; but the first trip gave me 62 miles

with one storage of the battery. I go down to Florida every winter because a competent physician says that at my age my chances of life are very much better where I can use my hoe and hand cultivator out in the open every day of the year. Am I, *really* so "blind," "selfish," and "hypocritical," after all?

CANNED ELECTRICITY.

Since you have made special mention of the electric windmill, I have thought best to submit what so great an authority as the *Scientific American* says about it in their issue for June 29:

WINDMILL DRIVE FOR THE ELECTRIC CAR.

Mr. A. I. Root, the beeman of Medina, Ohio, whose hobbies include an electric automobile which gets its current from a windmill, reports that he is making much progress in this matter. He has been able to charge his batteries to a point where his car ran 62 miles without recharging. He confesses, however, that this is the exception; ordinary winds will not charge to the full capacity of the batteries. Mr. Root is not sure that his initial and operating costs are yet such as to put the thing on a commercial basis, but is confident that windmill drive for the automobile will be a feature of the rural life of the future, and that it will have a development quite parallel to that of electricity canned from water power.

Good friends, is not that an achievement in the way of telling a little in a very few words—particularly that closing paragraph about "canned electricity?"

A few words is closing in regard to the second text:

As long as men continue using cigarettes, young boys are almost sure to use them in *spite* of the law; and our best up-to-date physicians agree, I think, in declaring that it is harder work to break off the habit of smoking cigarettes than to give up strong drink. There are many testimonies from reformed men who have gone thru the trial, both with intoxicants and cigarettes. Our own State of Ohio has a very just law in regard to selling or giving away cigarettes to boys under a certain age; but since cigarettes have been sent in such quantities to the soldiers it proves a double attraction to the boys. First, they see men smoking them; and as they are "little cigars" they look just as if they were made for the small boys to copy, as far as they are able, their fathers.

Secondly, since there is so much said about sending cigarettes to soldiers in the army, the boy, as a matter of course, wants to be patriotic, and thinks it is a fine thing to copy the soldiers on a small scale.

About ten miles from where I sit writing is a great onion farm. During this vacation time in the schools the children are offered big prices, girls as well as boys, to weed onions. A full truckload of these

children go from Medina out to the onion farm every morning, and back at night. Well, I have just been informed that this gang of boys and girls are all, or pretty much all, smoking cigarettes. It is the latest thing out, you know; and even if they are told that it is against the law of Ohio, that seems so far to make it, only the "more interesting," to the juveniles. Below I submit a copy of the law:

SECTION 12965. Whoever sells, gives, or furnishes to a person under eighteen years of age a cigarette, cigarette wrapper, or substitute for either, or a cigar or tobacco, shall be fined not less than twenty-five dollars nor more than one hundred dollars, or imprisoned not less than two days nor more than thirty days, or both; and for each subsequent offense shall be fined not less than fifty dollars nor more than three hundred dollars and, imprisoned not less than five days nor more than sixty days.

In view of the above, "shall the State of Ohio continue the business of growing a crop of fools, idiots, and imbeciles"?

Later.—Today is July 10, and a lot of kind words are coming with every mail. Most of them are in regard to the electric windmill. Here is one, and it comes from a man who uses tobacco too. (Did you ever?) This letter, I think, will do very well to balance the one at the opening of this Home paper.

Dear Friend:—As it only costs three cents I must tell you how I appreciate Our Homes and High-pressure Gardening. As the Lord says, "Give honor to whom honor is due." If it were not for your writings I would not take GLEANINGS, as I do not have time to care for many bees.

While I am a user of tobacco, and do not agree with all your writings, yet you are a good open confessor of your evil thoughts, which will in the end help us all to take an account with ourselves and do better.

I am glad you have invested money in your electric apparatus; for of what use is money if we do not spend it? and by your doing this act (even if there is no profit in it for you) you have benefited the world. There was no profit to Columbus nor to the queen of Spain in discovering our great land; but it is beyond computation what it has profited millions of us; and the great millions that will be made with electric devices after you and the rest of us are gone would likely amaze us if we were to see them. By and by tell us the cost of your apparatus. The earth and the fullness thereof are the Lord's, and all that we possess; for when our souls are required whose then will they be?

THOMAS HARRIS.

New Florence, Pa., July 8.

The electric windmill complete, cost, I think, about an even \$500. The freight on it from North Dakota to our Florida home, added to paying the inventor to go and set it up for me, made it come up close to \$700. This latter item of expense would not ordinarily be necessary; but I felt anxious not only to see but to have a good visit with the man who planned the invention. Further particulars can be obtained from the Electric Windmill Corporation, Wyndmere, S. D.

G. M. DOOLITTLE.

SOME RECOLLECTIONS IN REGARD TO HIM.

Their works do follow them.—REV. 14:13.

The *American Bee Journal* was first started in January, 1861, and continued one year. At the breaking-out of the war, and perhaps for some other reasons, it was discontinued till July, 1866. In August, 1865, my attention was first called to bee culture, as I have mentioned many times, perhaps. I have told you how I greedily hunted up everything in regard to bee culture, ransacking old foreign periodicals, hunting up Mr. Langstroth, and finally getting in touch with Samuel Wagner, the editor of the *American Bee Journal*. After procuring all of volume 1, perhaps largely thru my solicitation he started the journal again. From that time on I read every word of it, much of it over and over, and soon got in touch with the beekeepers, especially the successful ones, not only of our own land, but as far as possible, with those of the whole wide world. I can not tell exactly when Doolittle commenced writing as well as myself for the journal. Unfortunately our files are missing for the last half of 1869. In that year and in 1870 Doolittle furnished five different articles. In the same volume, under the name of "Novice," I furnished 13 different articles; and from that time on, until GLEANINGS was started in 1873, Doolittle and I had more or less to say in every number of the *American Bee Journal*. In order to get track I have run over those old volumes; and it has freshened up my memory to such an extent that it seems as if I had been meeting face to face the dear friends of almost fifty years ago. There were Henry Alley, Charles Dadant, Doolittle, Gallup, Adam Grim, Peabody, and the Rev. L. L. Langstroth. Then there was a long string of others whom it would take too much space to mention.

Doolittle's first article for GLEANINGS appeared on page 71 of our issue for August, 1873. As the report is short we give it entire:

I have got off 1600 pounds of box honey, which I have sold for 25 cents per pound. Extracted sold for 14 cents. I have also worked another small apiary for half of the honey (box honey), from which I have taken 900 pounds. I have also worked a 150-acre farm with the help of one man, and, to tell the truth, I am nearly worked out.

G. M. DOOLITTLE.

Borodino, N. Y., August, 1873.

You can see from the above that Doolittle was a busy man away back 45 years ago. From that time on I think Doolittle was a regular contributor. If I remember correctly none of the contributors to the *American Bee Journal* were paid anything

for their communications. Our good friend Samuel Wagner explained that it was uphill work to pay expenses, and therefore we volunteered to furnish the articles free of charge which we sent in. It was much a labor of love all around. We were anxious to encourage the business of making our land "a land flowing with milk and honey." Of course the most of us were producing extracted honey, after I told what could be done to save the bees the labor of comb-building. Doolittle, however, astonished us all; and, if I am correct, ran ahead of us all by producing comb honey in quantity almost if not quite equal to the number of pounds we secured by the use of the extractor. Of course I was greatly interested in learning how he did it; and after I had had considerable correspondence with him he was kind enough to pay me a visit. In fact, I am inclined to think he paid me two visits, but I can not be quite sure of this. I wonder if any who may see this can refresh my memory. Well, one great point of his getting such large quantities of comb honey and getting such prices was that he had devised the hand-somest and most taking honey-package the world ever saw. The bees built the honey in a peculiar section of his make; and after the bees had finished it straight and true, every cell nicely capped, he placed a little sheet of glass on each side; and when he sent it to market, the whole thing (two sheets of glass and a comparatively heavy wooden section) was all weighed up at the price of honey. I objected to asking people to pay so much a pound for wood and metal; but Doolittle had a clincher on that matter. He said that when his sections were exposed side by side to unglazed sections his always sold first at the same price or even a higher one; and, furthermore, he had never been able to supply the demand; and I have from first to last, as you may recall, said that supply and demand should regulate the price of all farm products.

I can not tell just when Doolittle turned to extracted honey in place of comb; but my impression is that for many years he held to his glazed sections and built up a market and a demand for them, somewhere in the city of New York, I think. Doolittle, as a matter of course, soon became an authority on every matter connected with bee culture. When he and I, as happened once in a good while, did not quite agree, the matter was submitted to the readers of GLEANINGS in a most friendly way; and when the A B C book came out, edition after edition, Doolittle was paid to take plenty of time to go over it;

and wherever we did not quite agree, the matter was submitted to the beekeepers of the world. In a like manner Dr. Miller's notes were also added.

In regard to Doolittle's kind visit I can not tell you just now whether it was before GLEANINGS was started or after; but what a time we did have in discussing different matters, from daylight till dark and even away along into the night! I do not know how it came about, but some way I never happened to make Doolittle a visit; and when the news of his death came I said to myself, "Oh! why did I not make that visit before he was called away so abruptly?"

Our departed friend was an earnest Christian, first, last, and always. He was alive and on the alert on prohibition and temperance. Sometimes he went even further than I did, as his valuable articles on temperance (as well as bee culture) in the back numbers of GLEANINGS attest.

Doolittle is gone; but in the language of our text his works and his writings will bless humanity for ages to come. As I was going over the back volumes of the old *American Bee Journal* I was wondering how many of the veterans are still living. If these words should meet their eyes, I should be exceedingly glad to hear from them. C. P. Dadant and his wife and family paid us a brief visit last winter at our Florida home. We had many a good laugh over the experiences of years ago.

Dr. Miller is still a beekeeper, and apparently as bright as ever, even if he is close to 90 years of age. I wonder if it is not true that beekeepers as a rule live longer than people in other pursuits. There has been some joking in times past in regard to the puritanical habits of beekeepers. At a convention in Detroit a boy set up a cigar-stand in the big hotel, but did not get much patronage. I think he said something like this:

"Why, what sort of people are these 'bee folks,' any way? I have sold only one cigar to the 'hull bunch,' and that was a five-center."

Maybe that is why so many of us live to a good old age. May God be praised for having let such a man live, and live to a good long life, full of good works, as our departed friend G. M. Doolittle.

MISTAKES IN THE PREPARATION OF "OUR DAILY BREAD."

Perhaps never before has there been so much attention given to the matter of food best for health. Even the school children and college students are making it a study. Below is an extract from a letter written

by one of my grandsons, only 18 years old, a student at Oberlin College:

"Why are there so many false teeth nowadays? We Americans take all the minerals out of our flour by making it *white*, all the minerals out of our sugar by making it *white*, all the minerals out of many of our breakfast foods by making them *white*, all the minerals out of our rice by polishing it to make it *white*, all the minerals out of our vegetables by peeling them—like potatoes. Then we wonder

why our teeth (which are made of mineral matter) are not what they ought to be. One of the *few great arguments* in favor of the use of honey is that it contains these highly valuable minerals. In this respect it is away above *white* sugar, and corn syrup, neither of which contains *any* mineral matter. Many people think to make up this loss by drinking mineral waters. *Nonsense!* With the exception of one or two minerals, such as common salt, the body *cannot* use the minerals in mineral water because they are *in-organic*. Wynne Boyden.



HIGH-PRESSURE GARDENING

NEW POTATOES BY "FOURTH OF JULY."

For almost if not quite 70 years it has been my ambition to have new potatoes in our garden by July 4. Sometimes they are rather small, of course; but when put in with green peas, even if they are not larger than hickorynuts, we find they are almost equal to the peas, and they do not cost a quarter as much money or time and work, as a rule. Well, what brings the matter vividly to mind just now is the fact that on the day before the 4th of July potatoes were retailing at our family grocery at 90 cents a peck. They did not have any old potatoes—in fact, had not had any for two weeks*—just those new potatoes grown down in Florida, and shipped all the way up to Cleveland, and then from Cleveland down to Medina, adding freight and profit all along; and when they arrived at Medina it was 45 cents for half a peck, and this when every man and woman and almost every child could have planted potatoes right here in Medina so as to have beautiful nice potatoes for cooking at almost no cost at all except a little work out in the garden.

Of course, the weather has something to do with it, but we did not get here from our Florida home until Apr. 20. About the first thing I did was to get some Six Weeks potatoes out of the cellar, where they were sprouting nicely, to plant, and get them in the ground, even if the weather was cold and wet. We planted a few right away, and then got the ground in better condition for the planting later on. Well, those I planted about May 1 are now furnishing beautiful potatoes, larger than hens' eggs, if I go about from hill to

hill and look carefully to find out where the ground is being pushed up by the beautiful tubers. Some of our children say, "Why, father, it is a big waste to dig potatoes when they are only half grown." But, bless you, we do not dig the whole hill. We just go along and pick out the largest ones, and the disturbance to the rest of the hill does good rather than harm. By the way, I do this work of getting a nice potato here and there with a big enameled spoon; and this spoon I keep hanging on a nail right handy, and I use it almost as much as I do my hoe. When you get used to it you will find it nicer than any trowel to dig around plants, and I think it is handier.

Well, how about the high-pressure potato-growing pictured in our July number. These we did not get started quite as early, but they were put in the bed (pictured) somewhere about May 1; and it was about four weeks before we had our ground ready so we could transplant them, and they too were ready to furnish potatoes by July 4, but not quite as large. Now, here is one point:

I have spoken about buying potatoes by the half-peck, even if it is many times good policy to buy enough ahead so as to get something like wholesale prices. But when there is a great chance that prices may go down, and go down *suddenly*, it is both prudence and policy to buy a little at a time, and that is why we have bought so few at a time. You may have noticed that about the first week in July, when home-grown potatoes come into the market, the price may drop almost a half within 24 hours.

Years ago a grocer here was out of potatoes, both old and new; and one rich patron told him he wanted some potatoes, no matter what they might cost. Accordingly the grocer sent word to me that he would give me an awful price—I do not remember what—for half a bushel of new

*By the way, the *American Issue* tells us that two million bushels of potatoes in the hands of the farmers up in Wisconsin were allowed to rot because it was impossible for the railroads to furnish cars to ship them where they were wanted. Yet at this very time the city of Milwaukee was sending out four train loads—train loads, mind you, not earloads—of beer every 24 hours.

potatoes if I could furnish them. So I hastily dug up some about half grown—enough to fill his order; but by the time my half-bushel reached the grocer some enterprising farmer had come into town with a load of nice potatoes, much better than mine, that he offered at half the price, or even less, than I was to get. When articles of food are steadily advancing, and you have good reason to think they will continue to advance, it may, of course, be policy to buy ahead; but look out when the market is dropping or is liable to drop.

Now, the moral to all this long story is to plant a few potatoes every spring, no matter if the weather is not just to your notion. Plant a few at least, in anticipation of the time when no potatoes are to be had at the groceries except those grown down in Florida and sent all the way up north, as in the instance related above. And I hardly need remind you again that the same or a similar short cut between "producer and consumer" can be maintained by the good people down in Florida.



TEMPERANCE

DRY TERRITORY FOR THE CANTONMENT;
DOES IT PAY?

We clip the following from the *Cleveland Plain Dealer*:

Prof. William J. Hutchins of Oberlin Graduate School of Theology, religious director for the past year at Camp Sheridan, Montgomery, Ala., told members of First Congregational Church yesterday morning that the army camps in the southeast are as clean as any in the world.

"There are evils in the camps—men's evils," said Prof. Hutchins, "but men who never made victorious fights against vice before entering the army are doing that today, aided by the excellent morale and surroundings.

"For five months I was with 450,000 enlisted men, and in all that time I saw only one drunken man. That is not a tribute to the virtue of the soldier so much as it is to the wisdom of the War Department in putting their cantonments in dry territory and to the vigilance of the military police."

"AND THERE SHALL IN NOWISE ENTER INTO IT ANYTHING THAT DEFILETH," ETC.

The following is clipped from the *Rural New Yorker*; but the heading above seems to fit Friend Collingwood's suggestion to a dot:

Step by step the government of this nation is building a barbed wire fence around a "bone dry" pasture and driving the entire herd of intoxicating liquors outside. The state of Idaho enacted a law which prohibited any one from keeping liquors for his personal use. This law was attacked on the ground that the state has no right to interfere with personal liberty in this way. Now the United States Supreme Court, through Justice McReynolds, settles the point. He says:

"The state has power absolutely to prohibit manufacture, gift, purchase, sale, or transportation of intoxicating liquors within its borders without violating the constitution. We further think it clearly follows from our numerous decisions upholding prohibition legislation that the right to hold intoxicating liquors for personal use is not one of those fundamental privileges of a citizen of the United States which no state may abridge. A contrary view would be incompatible with the undoubted power to prevent manufacture, gift, sale, pur-

chase, or transportation of such articles—the only feasible ways of getting them. An assured right of possession would necessarily imply some adequate method to obtain not subject to destruction at the will of the state."

This may jar some distinguished citizens who have long considered it a "fundamental privilege" to hold liquor in their homes or in themselves! In New York state hard cider is now classed as intoxicating liquor—which it surely is!

Now, reader, you are prepared to turn to the last verse of the next to the last chapter of the Bible and read the whole gracious promise to all who "love righteousness and hate iniquity."

"AND NOT UNTIL THEN."

We clip the following from the *Ohio Messenger*. As you will notice, it is simply an endorsement of what I have for some time back been saying over and over again.

Mr. Hobson, in answer to the question "When will the war end?" replied: "It will end when we win, and not until then. We shall begin to win when America and the allies go dry, and not until then."

From the *Cleveland Plain Dealer* I clip the following from Dr. R. H. Bishop, Commissioner of Health of the great city of Cleveland. Probably we have at present no higher authority on the matter of health.

BURNING UP HEALTH.

Americans who smoke burn up \$1,200,000,000 every year. Not only that, but they burn up their health as well. Tobacco is a drug (that's why it makes the small boy sick the first time he uses it); and altho the human body can become accustomed to its use, as it does to many other drugs, it suffers harm in time.

Smoke too much—and who can tell when they are not smoking too much?—and sooner or later you will be troubled with acid indigestion, innumerable catarrhs, trouble with your heart, and even blindness.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeier & Arpe Co., 139 Franklin St., New York.

FOR SALE.—Choice clover honey in new cans. VanWyngarden Bros., Hebron, Ind.

FOR SALE.—New crop clover extracted honey, 20c per pound; 2 60-lb. cans to case. H. G. Quirin, Bellevue, Ohio.

FOR SALE.—20 barrels of tupelo and gallberry honey, fine quality, in one barrel or more shipments, at 25c per lb. f. o. b. Ludowici, Ga. A. Nish.

FOR SALE.—To the highest bidder, my crop of white clover extracted honey, from 300 colonies bees. Purchaser to furnish containers. L. S. Griggs, 711 Avon St., Flint, Mich.

FOR SALE.—3,000 lbs. of fine clover honey extracted from combs having no brood, cased doubly in 60-lb. cans, 25c a pound. A. S. Tedman, Weston, Mich.

HONEY.—New crop clover and raspberry honey in new 60-lb. cans, two in a case, 25c a pound. Large sample for 25c in stamps. J. B. Holloper, Rockton, Pa.

FOR SALE.—Our new crop honey, clover-bass-wood, blended by the bees on the hives. One of the best lots on the market. It is packed in new 60-lb. tin cans, two to the case. Sample 25c to be deducted from first order. D. R. Townsend, Northstar, Mich.

HONEY AND WAX WANTED

Small lots of off-grade honey for baking purposes. C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

Comb honey wanted. Address 153 Box 323, White Plains, N. Y.

WANTED.—Comb and extracted honey. J. H. Taylor, Parksville, N. Y.

Cash at your bank for carlots and less of comb and extracted honey. Wesley Foster, Boulder, Colo.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares. Superior Honey Co., Ogden, Utah.

WANTED.—Light extracted honey, state price f. o. b. your station. I. J. Stringham, Glen Cove, N. Y.

WANTED.—Extracted honey to exchange for honey cans and bottles in all sizes. Write your wants to D. H. Welch, Racine, Wis.

WANTED.—Comb and extracted honey, car lots and less. Mail sample, quantity and price. W. Morris, Yonkers, N. Y.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

We are in the market for honey and beeswax. Send your best price on comb honey and a sample of extracted honey. State quantities you have, also style, size, and weight of package or section. Charles Israel Bros. Co., Inc., 486-490 Canal St., New York City.

WANTED.—Extracted honey, carload or less quantity. We can supply 5-gallon cans for your crop if needed.

Hoffman & Hauck, Richmond Hill, N. Y.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

WANTED.—Beeswax. We will pay for average quality beeswax delivered at Medina, 36c cash, 38c trade. We will pay 1 to 2c extra for choice yellow. Be sure your shipment bears your name and address as shipper so we can identify it on arrival.

The A. I. Root Co., Medina, Ohio.

FOR SALE

HONEY LABELS.—Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Conn.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

SEND TODAY for samples of latest honey labels. Liberty Pub. Co., Sta. D, Box 4E, Cleveland, Ohio.

FOR SALE.—300 boxes extra good second-hand cans at 65c per box of two cans. Manley Bros, Sandusky, Mich.

Beekeepers, let us send you our catalog of hives, smokers, foundations, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

Pennsylvania Distributors for Root Bee Supplies, save time and transportation expense on all standard hives, sections, etc., at catalog prices. Prothero, Bailey & Goodwin, Dubois, Pa.

FOR SALE.—Tame rabbits, any color or number. Breeding stock, 4 to 5 months old, \$2.00 per pair. Prompt shipment. Order now. George Tebbe, Dow City, Iowa.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—100 8-frame bee hives with sections, in good condition, \$1.50 each; 400 supers, 8-frame, at 40c each and 10-frame at 50c. Write 1. Becksted, 11 Opera House Blk., Watertown, N. Y.

HIVES.—Lot of ten standard Root dovetailed, 8-frame, 1½-story comb-honey hives. New goods, nailed and painted with reversible bottoms, metal covers with inner cover, frames with starters and supers fitted with two beeway 4¼x4¼x1½ sections, everything ready for the bees. Price \$4.00 each, the lot for \$36.00. A beekeeper going out of the business offers these at less than catalog price. J. B. Holloper, Rockton, Pa.

Buy a milk goat. I have a few left for sale. One 3-yr. old ¾ Nubian buck, \$30.00; 3 ¾ Nubian buck kids, each, \$25.00; 3 Grade Nubian doe kids, each, \$20.00; 1 3-yr. old ¾ Nubian doe, \$35.00; 1 yearling past ¾ Nubian doe to kid soon, \$35.00; 2 Saanen grade does, each, \$25.00; 1 native doe, \$15.00. All particulars and photos sent if interested.

R. M. Collins, 630 So. 22nd St., Muskogee, Okla.

WANTS AND EXCHANGE

Bees in exchange for good So. Florida farm land. Fine location for bees, over 10,000 acres in oranges. A. L. Hefinger, 1532 Olivewood Ave., Lakewood, O.

WANTED.—Ten or twelve-inch medium brood foundation mill. Good condition. Address The Kooeshaw Unity, Inc., Estero, Fla.

WANTED.—A two-frame Novice or Cowan tractor. State price.

Frank Roberts, R. D. No. 1, Dover, N. H.

WANTED.—A good honey location to start a line of apiaries. Will give suitable reward for the best reliable information. D. E. Lhonnemedieu, Colo, Iowa.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

REAL ESTATE

A small California farm earns more money with less work. Raise the crops you know about—alfalfa, wheat, barley, etc.—also oranges, grapes, olives, and figs. Ideal for dairying, pigs, and chickens. No cold weather; rich soil; low prices; easy terms; good roads, schools and churches. Enjoy life here. New comers welcome. Write for our San Joaquin Valley, also Dairying and Poultry Raising illustrated folders free. C. L. Seagraves, Ind. Com. A. T. & S. F. Ry., 1927 Railway Exchange, Chicago.

BEAUTIFUL HOME FARM, improved rich soil, well located, good buildings, 100 colonies of bees, up to date; best honey-producing location in the State; not crowded; average for past 7 years, 105 lbs., 5 acres of ginseng and goldenseal, all ages, in fine shape; half artificial shade, half natural. Will sell a part or all of seng-seal. 80-acre farm, \$80.00 per acre; \$7,000 for farm and bees, 150 extracting supers and combs, 150 shallow supers, 2-frame extractor, 2 large honey tanks. Terms, \$3,000 cash, balance time. A wonderful opportunity—a bargain. Reason for selling, poor health.

W. M. Penrod, Ronneby, Minn.

BEEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, R. D. No. 3, Vincennes, Ind.

Try Phelps' Golden queens and be convinced, \$1.00 each. C. W. Phelps, Binghamton, N. Y.

FOR SALE.—Untested Golden Italian queens, 65c each. J. F. Michael, Winchester, Ind.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Courtland St., New York.

Improved queens. All select. Get circular. J. E. Jordan, Morgan, Ky.

FOR SALE.—1918 Golden Italian queens; price list free. Write E. E. Lawrence, Doniphan, Mo.

When it's GOLDEN it's PHELPS. Queens, \$1.00. C. W. Phelps & Son, Binghamton, N. Y.

"SHE SUIT ME" Italian queens; \$1.00 from May 15th to Oct. 15th. Allen Latham, Norwichtown, Conn.

Golden Italian queens, untested, \$1.00 each, six for \$5.00. E. A. Simmons, Greenville, Ala.

Italian queens. Golden and 3-banded bred from best selected stock. Untested, each, 75c; 6, \$4.25; 12, \$8.25. Select untested, \$1.00 each. Satisfaction guaranteed. G. H. Merrill, Liberty, S. C.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey gatherers as can be found; each \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

J. B. Brockwell, Barnettts, Va.

PHELPS queens will please you, \$1.00.

C. W. Phelps & Son, Binghamton, N. Y.

Italian queens, the HONEY GATHERERS. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

Hardy Italian queens. The busy kind, no culls. Must please, \$1.00 each.

W. G. Lauver, Middletown, R. D. 3, Pa.

FOR SALE.—Three-band Italian queens. Untested, \$1.00; 6, \$5.00; 12, \$9.00. Tested queens, \$1.50 each. Robt. B. Spicer, Wharton, N. J.

Try ALEXANDER'S Italian queens for results. Untested, each, \$1.00; 6 for \$5.00; \$9.00 per doz. C. F. Alexander, Campbell, Calif.

Finest Italian queens, \$1.00 each; 6 for \$5.00. My methods free. J. W. Romberger, 3113 Locust St., St. Joseph, Mo.

FOR SALE.—Fine Italian queens, 75c each, \$8.00 per dozen. Safe arrival guaranteed. T. J. Talley, Greenville, Ala., Rt. No. 3.

Tested leather-colored queens, \$2.00; after June 1, \$1.50; untested, \$1.00; \$10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

FOR SALE.—Three-banded Italian queens, safe arrival guaranteed. Write for prices. J. A. Jones & Son, Hope Hull, Montgomery Co., Ala.

FOR SALE.—October 1, 100 colonies, eight-frame hives, wired foundation, no supers, \$6.00 per colony. L. R. Dockery, Hagerman, Ida.

FOR SALE.—On account of draft will sell entire stock of hives and supers at buyer's own price. Frank Quackenbush, Sharon, Wis.

Three band Italian queens, untested, \$1.00; select untested, \$1.25; tested, \$1.50; select tested, \$2.25. H. W. Fulmer, Box. G, Point Pleasant, Pa.

THREE-BAND ITALIANS ONLY. Untested queens, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50. H. G. Dunn, The Willows, San Jose, Calif.

FOR SALE.—Three-banded Italians, select untested, \$1.50; select tested, \$3.00; select tested breeders, \$10.00. Safe arrival and satisfaction guaranteed. Clinton Bradway, Monson, Mass.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1; 6 for \$5. Wm. S. Barnett, Barnettts, Va.

FOR SALE.—Golden Italian queens of an improved strain; the bees for honey, hardiness, gentleness, and beauty. Untested, \$1.00; tested, \$2.00. Wallace R. Beaver, Lincoln, Ill.

Three-banded Italian queens at Shenadoah Apiary, ready May 15. Tested, \$1.25; untested, \$1.00; dozen, \$8.00.

S. Click, Box 16, Rt. 2, Mt. Jackson, Va.

Bright Italian queens, ready April 15th, \$1.00 each. Safe arrival guaranteed. Write for prices of larger quantities.

W. W. Talley, Greenville, Ala., Rt. 4.

GOLDENS THAT ARE TRUE TO NAME. Untested queens, each, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50.

Garden City Apiaries, San Jose, Calif.

FOR SALE.—Golden Italian queens which produce gentle yellow bees, the hardest workers we have known. Untested, \$1.00, tested \$1.50. Wildflower Apiaries, So. Trust Bldg., Little Rock, Ark.

Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolans. Tested, \$1.00 each; untested 75 cts. each. Bees per lb., \$1.50; nuclei, per frame, \$1.50. Send your order for bees early.

C. B. Bankston & Co., Buffalo, Leon Co., Tex.

ITALIAN QUEENS.—The best I have ever had; untested each \$1; Eve, \$1.50; ten, \$8; twenty, \$15; fifty, \$35; 100 for \$60. Delivery beginning in June. Orders filled on time and safe arrival guaranteed. J. B. Hollopeter, Queen Breeder, Rockton, Pa.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, \$1.00; 6, \$5.00; tested, \$3.00; breeders, \$5.00 and \$10.00. C. W. Phelps & Sons, Wilcox St., Binghamton, N. Y.

FOR SALE.—Three-band Italian queens from best honey-gathering strain obtainable. Untested queens, 75 each; 6, \$4.50; 12, \$8.00. Safe arrival and satisfaction guaranteed.

W. T. Perdue, Ft. Deposit, Ala.

Golden Italian queens that produce gentle and good honey-gathering bees. No foul brood. Select tested, \$1.25; tested, \$1.00; untested, 75c; 6, \$4.25; 12, \$8.00. No nuclei or bees for sale.

D. T. Gaster, Randleman, N. C., R. D. No. 2.

FOR SALE.—Forty colonies of bees in standard 8-frame dovetailed hives. Combs are wired from full sheets of foundation. Also 75 full depth extracting supers with drawn comb. Bees, \$4.50 per colony; supers, \$1.75. Reason for selling is that I have been drafted.

Paul D. Roban, Waverly, Minn.

North Carolina bred Italian queens of Dr. C. C. Miller's famous strain of three-band Italian bees, gentle and good honey-gatherers. July 1 until Oct. 1, untested, 85c each, 12, \$9.00; tested, \$1.25 each, 12, \$14.00; select tested, \$1.75 each. Safe arrival and satisfaction guaranteed.

L. Parker, Benson, N. C., R. F. D. No. 2.

PURE ITALIAN QUEENS. Goldens that are GOLDEN and Doolittle's choice stock. Select untested (laying queens), one, \$1.00; 6, \$5.00; tested, \$1.50; best breeders, \$5.00. For large lots write for prices. Pure mating, safe arrival and satisfaction I guarantee.

J. E. Wing, 155 Schiele Ave. San Jose, Calif.

ITALIAN QUEENS.—Northern-bred three-banded, highest grade, select untested, guaranteed, queen and drone mothers are chosen from colonies noted for honey production, hardiness, prolificness, gentleness and perfect markings. Price, 1, \$1.00; 12, \$10.00; 50, \$35.00. Send for circular.

J. H. Haughey, Berrien Springs, Mich.

FOR SALE.—Achord's Pure Italian Queens, hardy and prolific. No disease. Satisfaction guaranteed. Before June 16, untested, 1 for 90c; 12 for \$10.00; tested, 1 for \$1.50; 12 for \$16.50. After June 16, untested, 1 for 75c; 6 for \$4.25; 12 for \$8.00; 50 or more, 65c each; tested, 1 for \$1.25; 6 for \$7.00. Best breeder, \$3.00.

W. D. Achord, Fitzpatrick, Ala.

Warranted queens from one of Dr. Miller's breeders, \$1.00 each, \$10.00 per doz. Tested queens, \$1.50 each. One-frame nuclei, \$1.50; two-frame, \$3.00; three-frame, \$4.50; without queens, Add price of queen if wanted. Our apiaries have been inspected and are free of disease. Ten-frame colonies, \$10.00; eight-frame, \$9.00; Danz. colonies, \$8.00 each, with tested queens. We are sold out of pound packages.

Geo. A. Hummer & Sons, Prairie Point, Miss.

Fine queens of Dr. Miller and Walker's stock, \$1.00 each, 6 for \$5.00; 12 for \$9.00, 100 for \$75.00.

Testimony of Mr. J. M. Meadow, Dorton, Tenn. "I have in my yard queens from four different breeders. Walker's beats them all."

Testimony of Mr. A. K. Whidden, San Jacinto, Cal., Bee Inspector of Riverside Co., "I have just inspected an apiary for Roy Bateman. They were regueneed with your queens. The superiority of those queens was so marked that I want 100 or more." Curd Walker, Queen-breeder, Jellico, Tenn.

HELP WANTED

WANTED AT ONCE.—One or more men to work with bees. State age, experience, wages and give reference. Permanent place to right man.

The Rocky Mountain Bee Co., Billings, Mont.

WANTED.—Young men of energy and character, of clean habits, not eligible for military duty, as helpers in our extensive bee-business. Fine chance to learn. Write immediately, giving wages, age, height, weight, experience, and references all in first letter, or expect no answer.

E. F. Atwater, Meridian, Idaho.

WANTED.—Industrious young man, fast worker, as a student helper in our large bee business for 1918 season. Truck used for outyards and hauling. Apiaries located near summer resorts. Will give results of long experience and board and small wages. Give age, weight, experience, and wages in first letter.

W. A. Latshaw Co., Clarion, Mich.

PATENTS

Practice in Patent Office and Courts
Patent Counsel of The A. I. Root Co.

Chas. J. Williamson, McLachlan Building,
WASHINGTON, D. C.

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Is at your command at
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Sioux City, Iowa

We have a market for your honey and
beeswax.

Our Food Page—Continued from page 478.

or more sections and transfer to the pieplate with a pancake turner, joining the cut edges. The upper crust may be fitted on the same way. Altho it breaks very easily a little patience will enable one to achieve a very creditable pie.

FILLING.

2 cups raisins	1 cup cold water
$\frac{1}{4}$ cup honey	$1\frac{1}{2}$ tablespoons rice
1 tablespoon butter or margarine	1 cup flour
	1 tablespoon lemon juice

Mix all together and bake between two crusts. The lemon juice may be omitted and orange juice substituted.

DATE PUDDING.

2 cups milk	3 level tablespoons corn-
$\frac{1}{2}$ cup honey	starch
10 seeded dates, cut small	$\frac{1}{2}$ teaspoon salt
	1 beaten egg

Dissolve the cornstarch in a little of the milk and put the rest of the milk, the honey, dates, and salt in a double boiler. When it comes to a boil, thicken with the cornstarch and cook about 20 minutes. Pour the mixture over the beaten egg, stirring constantly and put back in the double boiler to heat through. Serve cold with whipped cream. Skimmed milk may be used in the pudding in which case add a bit of butter when you put in the egg.

COTTAGE PUDDING

$\frac{1}{2}$ cup sugar	1 cup sweet milk
2 tablespoons shortening	1 cup rice flour
1 egg	6 teaspoons baking powder
$\frac{1}{2}$ teaspoon salt	
$1\frac{1}{2}$ cups sifted barley flour	1 teaspoon extract lemon or other flavor

Cream the sugar and shortening together, beat the egg, and add the milk and flour, in which the other dry ingredients have been sifted, a little at a time, alternately. Beat thoroly, add the flavor, and bake in a loaf pan in a moderate oven. Serve hot with lemon or any preferred sauce.

BLACKBERRY AND APPLE MARMALADE.

Blackberries	Tart apples	Honey
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Crush the blackberries, cut the apples small and cook equal parts of each together until soft. Measure the fruit and for each cup of cooked fruit take $\frac{3}{4}$ cup of honey and mix well. Cook until it will drip from the side of a spoon in two or more drops, put in sterilized jelly glasses and cover when cold with melted paraffin. Be sure that the paraffin is hot when poured on and tip the glass so that it comes up on the sides enough to make an airtight seal. The marmalade will be of better quality if only three or four cupsful are cooked at a time.

All measurements level.

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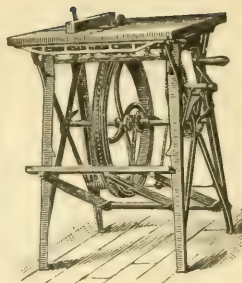
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ASSETS OVER ONE MILLION DOLLARS

BOOKS AND BULLETINS

"Transferring Bees to Modern Hives," Farmers' Bulletin No. 961, by E. L. Sechrist. Copies may be received on request made to the U. S. Dept. of Agriculture.

"Reports of the Pennsylvania State Beekeepers' Association," being reports of the 9th, 10th, 11th, 12th, and 13th annual conventions and summer meetings, published by the direction of the Association, has recently come from the press. It is a large booklet of 128 pages. There is a large amount of good bee lore in it, contained in the printed addresses. H. C. Klinger of Liverpool, Pa., is secretary, of whom it may be possible to secure copies of this rather exceptional report.

"Beekeeping for West Virginia," a bulletin of the West Virginia Department of Agriculture, Charleston, W. Va. An elementary work on good beekeeping, and an excellent little text book, by Chas. A. Reese, assistant entomologist and apiarist.

"Honey Bees and Honey Production in the United States," Bulletin No. 685, U. S. Dept. of Agriculture. This is a contribution from the Bureau of Crop Estimates. It is a bulletin seeking to give a census of bees in the United States and by States. It gets right down to figures and tables. The contents include: Map indicating distribution of colonies of bees in the United States; extent of the industry; figures on wintering and losses; yields of honey per colony and total production; exports and imports of honey; honey prices over a period of years; production of 1917; nectar sources; geographic distribution and characteristics of important honeys; etc., etc. It is a bulletin that every progressive, up-to-date beekeeper should get and keep. Write for it to the U. S. Dept. of Agriculture, Washington, D. C.

"The Diagnosis of Bee Diseases by Laboratory Methods," Bulletin No. 671, U. S. Dept. of Agriculture. This bulletin is by Arthur H. McCray, apicultural assistant, and G. F. White, expert engaged in the investigation of bee diseases. Any beekeeper desiring to know how he may surely recognize European or American foul brood, sac brood, or nosema disease, should send five cents for this bulletin to the Superintendent of Documents, Government Printing Office, Washington, D. C. It is a bulletin that should be ready to the hand of every beekeeper.

"Diseases of Bees: Their Detection and Treatment," by H. W. Coley, Connecticut Experiment Station, New Haven, Ct. Dr. C. C. Miller would probably take issue with the first statement in this bulletin giving treatment for European foul brood, which is this: "The shaking treatment combined with requeening the colony with a young Italian queen of good stock is the recognized treatment." But Mr. Coley does also give the simple requeening treatment.

"The Flower and the Bee." Beekeepers especially will be interested in reading a book recently published, entitled "The Flower and the Bee." The author is the well-known John H. Lovell of Waldoboro, Me., who has contributed many valuable articles to Gleanings and to the A B C and X Y Z of Bee Culture. Mr. Lovell has peculiar qualifications for writing a book of this kind, having been for years a practical beekeeper and an accurate, close, and keen observer of bees and flowers. In addition, the book is written in a popular style, technical terms being avoided as much as possible. It contains many fine illustrations of flowers. The author has much to say on the function of insects (especially bees) and other agencies in the pollination of flowers. He explains that a great number of our cultivated fruits are partially or wholly self-sterile, and, in the absence of bees and other

pollinating insects, these would be entirely barren or nearly so. Bright colors, sweet odors, and varied forms of flowers were not created solely for the benefit of man, for also for the purpose of attracting the attention of bees and other pollinating insects. The importance of cross-fertilization is given particular attention, and instances are related of failures in the raising of some varieties of apples, pears, strawberries, grapes, and other fruits, unless these were cross-pollinated from different individuals and varieties of the same species. In many cases special appliances exist for the securing of cross-breeding, resulting in more vigorous plants. However, there are also many contrivances to bring about self-fertilization in the event of the failure to secure the cross-fertilization. Farmers, fruit-growers, beekeepers, and all lovers of fruit and insect life will obtain much pleasure and information of practical value from the reading of this interesting book. (Published by Charles Scribner's Sons, New York. Price, \$2.00 net.)

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AROUND THE OFFICE

M.-A.-O.

I wouldn't of come to life agin probably only for two or three things happenin' that mightn't a get into print any other ways at all. Then, too, some of my real true friends—the kind that hang on and pull up when a feller's way down—has been a pleadin' with the Roots to let poor old M.-A.-O. have one more chance just oncet. The Roots extracted a promise of language reform out of me, and have put on a purty stiff bit onto me, and so I am here again—reformed.

The things that happened are mostly two. Night afore last, just at dusk, our queen rearer's, Mel Pritchard's, son Arlie tried his father's odorless method of picking up by the tail a skunk he found snoopin' around his apiary. That method failed oncet again completely. At such short range a skunk has most of the advantage over a trustin' enemy, especially if he (the skunk) makes a good shot for the eyes of the feller that's man handlin' his tail. When Mel reached his sufferin' son's side, he found Arlie's eyes still stickin' into their own sockets but seein' nothin', and smartin' considerable worse'n red pepper and brimstone. There was a deal of washin' and scourin' of Arlie's eyes right to oncet, also some considerable talk, besides what else filled the air for about a mile in all directions. When Arlie (he's a good Methodist, too) recovered sufficient so he could see a little and think over just what had happened, he remarked to his father that he agreed with M.-A.-O. and Neal Kellogg and that trustin' neighbor that "there's a h— of a lot about skunks that he (Mel) don't know." But Mel is still hanging on to his skunk-tail-hoistin' theory, and says Arlie didn't do it right. Arlie says he did, but that the skunk was irritable or

(Continued on Page 508.)

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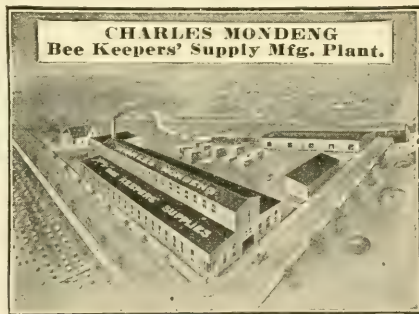
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Around the Office—Continued

some'thin' that evenin', and the trouble always is you can't tell the frame of mind a skunk is in. Mel says you ought always to look at a skunk's eye afore hoistin' him. and see what frame of mind he's in. Arlie says you better look out for your own eye if you do hoist him.

* * *

The other thing happened the same night. It wan't much, only we don't know how much it was, for we didn't hear what was said. But "Uncle Amos" got up during the night some time, and in the dark of his bedroom stepped on a bumblebee that he had imported in his trousers the day before. A. I. R. was surprised some, and put it down as the worst sting he ever got. I figure it out that the bumblebee family made up its mind that it was about time they got a little attention from A. I. R., and took this sneakin' prowlin' way of doin' it. Any-way, apis bumblebeus has scored with Uncle Amos stronger in a way than apis mellifica has recently.

* * *

Fishin's poor this season. My bees are stingin' uncommon hard. Cabbage worms put in an undue early appearance. Those squash bugs are meaner'n ever. So I ain't seein' much more light on the great universal plan than heretofore; and the reason of bein' at all, with cabbage worms, squash bugs and potato bugs thicker'n hair on a dog, ain't a clearin' up to me much. Poverty, hard gardenin' conditions, no fishin, and war news don't make life one continuooin' on-with-the-dance-and-let-joy-be-unconfined with me. But wait till I get up fishin' with friend J. L. Byer. He's invited me and I'm goin'.

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2-comb nuclei	4.00	22.00	42.00	3.50	18.00	35.00
3-comb nuclei	6.00	33.00	60.00	4.50	25.00	45.00
8-frame colonies . .	10.00	55.00		8.00	45.00	
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Managing Editor

READY MONEY FOR YOUR HONEY!!

SHIP NOW. If you have honey for sale, we want to buy it. Ten thousand producers in all parts of the world witness to the reliability of this house. No purchase too large or too small. We handle many carloads a year. Send us a sample and name your most reasonable price. We buy every time your price justifies.

PROMPT REMITTANCE. Remittance sent by return mail for every shipment we receive.

Honesty and integrity during the many years in the honey business have won for us the good will and confidence of thousands.

OLD COMBS AND CAPPINGS. Send them to us for rendering. We pay you the highest market price for beeswax, and charge you but 5c per pound for the wax rendered. It pays to send us your old combs and cappings.

WANTED, COMB HONEY. Comb and extracted Honey find ready sales here. Tell us what you have. We buy beeswax at high prices. Always glad to reply to inquiries.

WE SELL LEWIS BEEWARE. "Lewis," stands for the highest quality Beeware known. Safe and reliable, "Made like furniture." We are glad to fulfill your needs.

Our New Home

We are now located at Pearl and Walnut Streets, and are in the largest Honey House in the country. When you are in Cincinnati don't forget to call on us, for it will be a pleasure for us to show you our wonderful new home.

**DADANT'S FAM-
OUS FOUNDATION**

**ROOT'S SMOKERS
AND EXTRACTORS**

SEND FOR OUR 1918 BEE CATALOG

THE FRED W. MUTH CO.

PEARL & WALNUT STS.

CINCINNATI, OHIO

- Get that last drop of honey.
- It's the maximum crop that is needed this year.
- You can't afford to let your bees be crowded for lack of equipment.
- We can ship goods to you promptly, and they are Root's Goods.
- HONEY CONTAINERS. We are the Michigan agents for the Weis fibre honey containers. They are inexpensive, clean, and leak-proof. Send 15 cents in stamps for samples and prices.
- HONEY WANTED.

M. H. HUNT & SON, Lansing, Michigan

HONEY WANTED

We are in the market at all times for unlimited quantities of honey, both comb and extracted. Before selling your crop let us hear from you, quoting your lowest price, either f. o. b. your station or delivered Cincinnati. - If extracted, mail sample, state how it is put up; if comb, state grade and how packed.

C. H. W. WEBER & COMPANY
CINCINNATI, OHIO

HONEY MARKETS

The honey market remains very strong, and there is a lively demand for all the honey put on the market. The tendency of prices is upward at present, but we have no predictions to make as to what the market will eventually do. Below we quote the prices as given by the Government Bureau of Markets and by leading dealers in large cities as quoted to us. These should have the careful study of the beekeeper with honey to sell.

Honey was placed on the Government's "export conservation list" on Aug. 10. This means that all exports of honey hereafter will be strictly under government supervision, and that sales abroad by private firms at any price and on any terms, without the U. S. Government's permission, has been stopped. The Government's action regarding the export of honey is probably due to the fact that the United States means surely to provide for its own and the Allies' need of honey. We don't know that this Government action affects the price of honey.

U. S. Government Market Reports.

HONEY ARRIVALS SINCE AUG. 1 AT IMPORTANT COMMERCIAL PORTS.

Medina, O.—Alabama, 1,133 lbs.; Mississippi, 29,614 lbs.; Pennsylvania, 26,917 lbs.; North Carolina, 15,665 lbs.; Florida, 11,284 lbs.

SHIPPING POINT INFORMATION, AUG. 14.

Los Angeles, Cal.—Supplies cleaned up. Demand active, firm feeling. Cash to producer on farm: extracted, white, 21½-22c; light amber, 20½-21½c; amber, few sales, 15-16c per lb. Comb honey, \$6.00-\$6.50 per case. Beeswax: 34-36c per lb.

San Francisco.—Shipments liberal. Demand and movement good, steady feeling. Wagonloads, track side, extracted per lb.: water white, 22-23c; sage white, 21-22c; alfalfa white, 20-21c; light amber, 19-20c; dark amber, 15-16c. Beeswax: 33-36c per lb.

Caldwell, Ida.—(Unofficial).—No sales. Inquiry steady. Crop not made yet.

Yakima, Wash.—Shipments light. Growers holding for higher prices. Few sales reported. Cash to producers, alfalfa white, in 5-gallon cans, 22½c per lb.

TELEGRAPHIC REPORTS FROM AUG. 15 MARKETS.

Portland.—Demand active, strong feeling. Some growers holding for higher prices. Cash to producers, extracted, amber 15-18c per lb.; light amber 17-21c; white, 20-24c. Comb honey, \$4.75-\$5.25 per case. Sales to manufacturers, amber, 18c per lb.; light, 22c; white, 25c. Sales direct to retailers, extracted, water white alfalfa, 5-gal. jackets, 27c per lb., 2-gal. jackets, 29c per lb.

Cincinnati.—1,700 lbs. Florida, 988 lbs. Kentucky, 3,510 lbs. Alabama arrived. Supplies very light. Demand and movement slow. Market firm. Few sales. Sales to jobbers, extracted, California, white orange, 25-26c per lb. Beeswax, demand and movement slow, market steady, few sales. Average yellow, 37-40c per lb.

Denver.—Approximately 100,000 lbs. extracted, 1,300 cases comb arrived. Demand and movement good, firm feeling. Quality and condition generally good. Sales to jobbers, comb, 24-section cases, No. 1 white, \$6.50; No. 2, \$6.00. Extracted, white to light amber, 23-25c per lb.

Kansas City.—14,200 packages by express and approximately 750 lbs. extracted by freight arrived. Receipts very light. Demand poor, movement limited, weak feeling. Sales to jobbers, comb, native Missouri, quality and condition generally good, 24-section flat cases, light, \$6.50-\$7.50. Extracted, quality and condition generally good, 18-23c per lb. Beeswax, receipts very light, supplies light, demand light, movement limited, firm feeling, sales to jobbers, 35-38c per lb.

New York. 317 bbls. and 25 tierces Porto Rico,

1 car California. Receipts moderate, demand light, movement slow, market firm. Sales to jobbers, extracted, per gallon, Porto Rican, \$2.35-\$2.45, mostly \$2.40; California, light amber, \$3.00-\$3.12; white \$3.20-\$3.25. Beeswax, arrivals 178 bags West Indies, 4 bbls. 8 boxes, 19 bales, 6 bags, Porto Rico; 42 bags Cuba. Receipts increasing. Demand and movement good, market firm. Per pound, yellow 43-44c; dark 42-43c; some poorer as low as 37c.

St. Louis.—No arrivals. Supplies light. Too few sales to establish market.

Chicago.—Supplies light. Demand and movement moderate. Sales to jobbers, extracted, white 23-24c; amber, 21-22c per lb.; comb No. 1, 27-28c per lb. Beeswax, prime 36-38c per lb.

Minneapolis.—Minnesota receipts very light. Supplies cleaned up. Very few sales. Sales direct to retailers, comb honey, 24-section cases, \$6.50. Extracted, no supplies.

Philadelphia.—Arrivals, 7,000 lbs. New York, 4,000 lbs. New Jersey, 1 car California, 3,000 lbs. Pennsylvania, 90,000 lbs. Florida. Sales principally to soft drink dealers; New York, Pennsylvania, New Jersey, 5-gallon cans, extracted, 20-22c, mostly 20c per lb.; Florida and domestic, 22c; California bulk, 22½c per lb.

St. Paul.—Minnesota receipts very light. Supplies cleaned up. Very few sales. Sales direct to retailers, comb honey, 24-section cases, \$6.50; extracted, no supplies. Charles J. Brand.

Chief of Bureau of Markets.
Washington, D. C., Aug. 15.

General Quotations of Wholesalers.

[These firms are asked to quote the wholesale prices they make to retailers. Accordingly their prices must be figured at least one profit higher than the price paid the producer. The large dealers do not quote prices in print that they will pay futuramente to producers.]

NEW YORK.—We quote from several of the leading honey dealers in New York, date of Aug. 14-15, as follows: "Market strong; light amber extracted, 25c." "Some Porto Rican arriving and selling readily at \$2.45 to \$2.50 per gallon. Not much new white crop yet received. Buyers are offering producers 20 to 22c, f. o. b. cars for white; no comb honey arrived. Extracted, white, 25c." "Panic in export trade; every one trying to unload as no shipping space is available and the general opinion is that England will make a maximum price as they have done on sugar syrup and molasses. Comb honey, extra fancy, per case, \$7.50; fancy, \$7.25; No. 1, \$7.00. Extracted, white, 23c; light amber, 22c; amber, 21c. Beeswax, 40c." "Spot offerings command premium of 2 to 3 cents on all good quantities arrive to make competition in this market. Until the market is firm high prices will prevail thru brokers' and jobbers' lots. Comb honey, extra fancy, \$5.50 to \$6.00; No. 1, \$5.25 to \$5.50. Extracted, white, per lb., 22 to 25c; light amber, in cans, 20 to 22c; amber 18 to 20c."

CHICAGO.—Comb honey is now coming forward and is meeting with a ready sale. No. 1 fancy brings 30c to 32c per lb. No amber honeys offered. Extracted honey, light amber in cans, is bringing 18c to 19c per lb.; white 20c to 22c per lb. according to body, flavor, and color. Beeswax is steady at 35c to 38c per lb.

Chicago, Ill., Aug. 16. R. A. Burnett & Co.

KANSAS CITY.—The market on honey is only fair. Shipments are a little heavier. Comb honey, fancy, per case, \$5.50 to \$6.00; No. 1, \$5.50 to \$6.00. Extracted honey, white, per lb., 24c; light amber, in cans, 22c; amber, 20c. Clean, average yellow beeswax, per lb., 35c.

C. C. Clemons Produce Co.

Kansas City, Mo., Aug. 14.

ST. LOUIS.—Very little new comb honey is arriving in this market, and demand is quiet. Some Southern extracted has arrived, but local extracted will be rather scarce this year. Southern extracted in good demand past week. Quotations below are nominal and according to quality and quantity. (Comb honey, extra fancy (per case), \$6.00; fancy, \$5.50; No. 1, \$5.00; No. 2, \$4.50. Extracted hon

ct. light amber, in cans, 21c; amber, 19c, in barrels, 18c. Clean, average yellow beeswax, per lb., 10c.

R. Hartman Produce Co.
St. Louis, Mo., Aug. 14.

DENVER.—We quote No. 1 comb honey No. 1, \$6.50 per case of 24 sections; No. 2, \$6.00. Extracted honey, white (per lb.), 23-25c. Clean, average yellow beeswax, per lb., 35c cash, 37c trade.

The Colorado Honey Producers Ass'n.
Denver, Colo., Aug. 15.

BUFFALO.—Fair supply offering. Demand only fair on account of high prices. Comb honey, extra fancy, per lb., 28-29c; No. 1, 26-28c. Extracted honey, white, per lb., 21-22c; light amber, in cans, 20-21c.

Glendon & Lansing.
Buffalo, N. Y., Aug. 16.

CLEVELAND.—We have not yet received any first-class new honey in good condition, but think a limited quantity would sell at the following prices: Comb honey, fancy, per case, \$6.00; No. 1, \$5.50; No. 2, \$4.50.

C. Chandler's Sons.
Cleveland, O., Aug. 15.

SYRACUSE.—There doesn't seem to be any great demand for honey at present. People are eating fruit now. Comb honey, extra fancy, per case, \$7.20. Extracted honey, white, per lb., 25c; light amber, in cans, 23c.

E. B. Ross.
Syracuse, N. Y., Aug. 14.

PORTLAND.—Very little comb or extracted coming in. Season quite tardy. Prospect good for late crop. Demand sluggish on account of high prices asked and increased freight rates. Producers seeming to hold for higher prices. No contracts being made for future shipments. Comb honey, fancy, per case, \$6.00; No. 1, \$5.50; No. 2, \$5.25. Extracted honey, white (per lb.), 20c; light amber, in cans, 18c; amber, 16c. No beeswax offered.

Pacific Honey Co.
Portland, Ore., Aug. 13.

TEXAS.—Very little honey in Texas. In the north, east, and extreme southern part there was a light crop, only about 20 per cent of normal seasons. In the western part a complete failure. Comb honey, No. 1, bulk, 20c. Extracted honey, light amber, in cans, 18c. Clean, average yellow beeswax, per lb., 38c.

J. A. Simmons.
Sabinal, Tex., Aug. 13.

MONTREAL.—Clover honey in some districts is a fair average crop; in other districts, very little honey available. Too early to say about the crop of buckwheat honey. Comb honey, extra fancy (per lb., 26c; fancy, \$25c; No. 1, 24c; No. 2, 21c. Extracted honey, white, per lb., 23c; light amber, in cans, 22c; amber, 20c.

Gunn, Langlois & Co., Ltd.
Montreal, Can., Aug. 14.

TORONTO.—The market has not yet opened. Some producers have been asking 20c per pound while others are asking as high as 25c. No sales appear to have been made and the market has not yet settled down.

Eby-Blaine, Ltd.
Toronto, Ont., Aug. 14.

HAMILTON.—There are some very good samples of honey coming in and some shippers say they have a fair crop. We have have not got down to prices yet, but will next week. It will be high. Have bought some in 10-lb. tins at 21c delivered.

F. W. Fearman Co.
Hamilton, Ont., Aug. 14.

CUBA.—Extracted honey, light amber, in barrels, \$1.80 to \$1.90 per gallon; amber in barrels, \$1.80-\$1.90 per gallon. Clean, average yellow beeswax, per lb., 38c.

A. Marzol.
Matanzas, Aug. 13.

LIVERPOOL.—Since our last report the market has remained steady and for good extracted honey we quote 40 to 42 cents per lb. The Controller has not yet fixed his price, altho we have attempted to get him to name it. Honey on the spot has therefore realized good prices because buyers are anxious to get it before any control is exercised, when their supplies would probably become limited. There

have been about 1,000 barrels sold at the following prices: Chilian, 1st grade, 43c per lb.; 2d grade, 42c; 3d grade 41c; 4th grade, 40½c; ungraded, 35-37c. Cuban, 38 to 42c. Jamaican, 41½c. White Haytian, 42c. St. Domingo, 41½c. The market for beeswax still remains dull with prices remaining at 48 to 50c per lb.

We have tried to obtain some information from the Ministry of Food respecting their contemplated action in controlling honey. We telegraphed them to try to get some definite assurance that the controlled price would not be less than the present market value, but they replied they were unable to give such an assurance. No definite announcement has been made so far which is very vexatious to traders. We ourselves had an offer of 600 barrels for direct shipment from Cuba but we could not risk bringing it in under the present uncertain circumstances.

Taylor & Co.
Liverpool, England, Aug. 1.

MEDINA.—Prices continue firm with offers of extracted increasing from week to week, while comb honey offers are very limited. For fancy white comb we pay \$6.00 to \$6.50 per case. For No. 1 comb 50c less. Extracted ranges from 19 to 23c at first hands. The results of the order of Aug. 10, putting honey on the Export Conservation list, remain in doubt.

The A. I. Root Co.

Classified Advertisements—Received Late

WANTED.—Will buy bees in South Georgia or Florida.

Heard & Ellison, Kinde, Mich.

WANTED.—Cyprian queens or nuclei.

Ronald Kirk, Rockton, Pa., R. D. 1, Box 29.

FOR SALE.—10 double cases of 60-lb. cans of superfine alsike clover honey at 25c lb., also 4 cases of biscuit grade at 15c lb. Sample of either, 10c.

A. S. Tedman, Weston, Mich.

FOR SALE.—2,500 lbs. white clover and basswood honey in 60-lb. cans, two in a case, 25c a lb.; large sample for 25c to be deducted from first order.

A. C. Beach, North Rose, Wayne Co., N. Y.

WANTED.—A few good colonies of bees. If delivered on or before Sept. 20 would accept some very light in stores. State prices, condition and style of hive.

Howard E. Harriman, Prospect, Me.

FOR SALE.—66 flax-board division-boards, 1 in. thick; winter protection better than any board made. Sample board, 35c postpaid; 2 or more not prepaid, 25c each; the lot, \$13.

G. Beard, Magnetic Springs, O.

WANTED.—On shares 200 or more colonies in good location; have had 20 years' experience and have plenty of experienced help. J. E. Hughes, R. D. 20, Box 18, Alexandria, Ind.

TRADE NOTES

3½ x 5 x 1½-IN. ONE-BEEWAY SECTIONS.

Here is a splendid opportunity for those beekeepers who can use an ideal section. We have on hand in our Medina warehouse:

5000 A Grade Sections 3½ x 5 x 1½-in. one-beeway
3000 B Grade Sections 3½ x 5 x 1½-in. one-beeway

To clear, we offer them at \$4.75 per thousand for the B grade, and \$5.00 per thousand for the A grade. This offer is certainly a bargain in view of the present prices of sections which is \$10.00 per thousand.

The A. I. Root Company.

BEES Tested Italian Queens, \$1.50

We furnish full colonies of bees in single-walled and double-walled hives. Nucleus colonies and bees by the pound.

Write for what you need.

I. J. Stringham . . Glen Cove, N. Y.

Shipping Cases Needed?

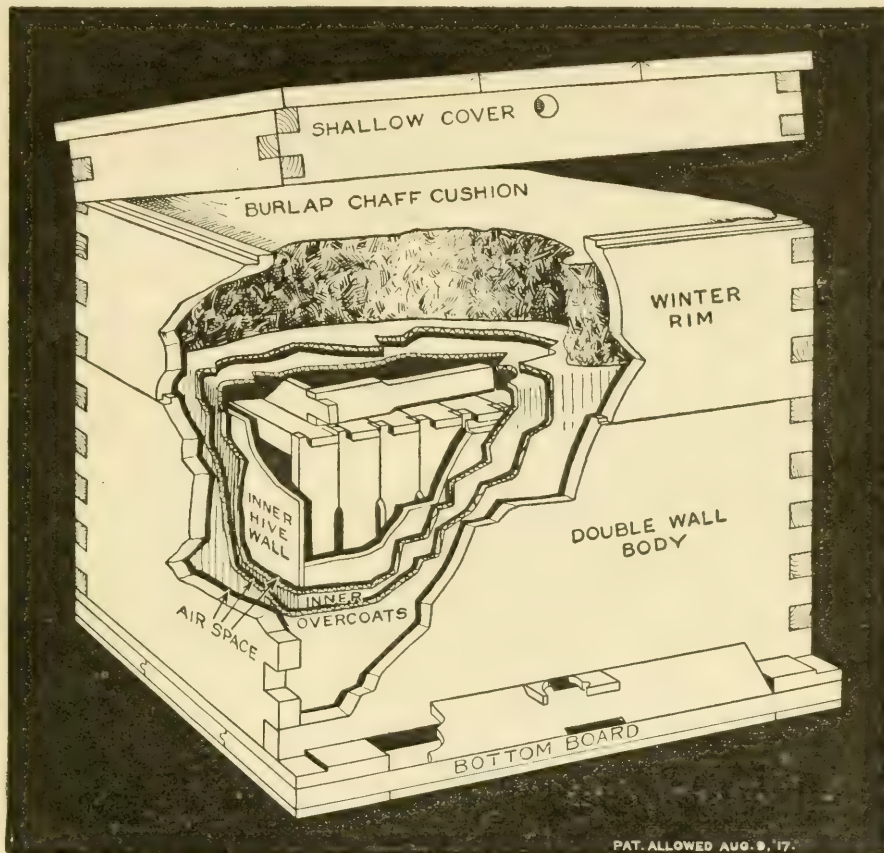
IF so we can furnish them at Syracuse, N. Y., also boxes of 2-60 lb. cans. Up to July 10th the weather has been cold but when the weather was warm the bees brought in considerable honey. We presume you have secured your share and will need cases and containers. Better send in an order right away to be able to have them on hand when wanted.



F. A. SALISBURY
1631 WEST GENESEE STREET
SYRACUSE, NEW YORK

WINTER PROBLEM SOLVED BY WOODMAN'S IMPROVED PROTECTION HIVE

"The Hive with an Inner Overcoat." 100 per cent Perfect Protection by Test, 1916-8



PAT. ALLOWED AUG. 9, '17.

THE INNER OVERCOATS DID IT.. Without any special preparation bees wintered without loss in these hives. There were no dead bees on the hive bottoms and it was a joy to see the condition they were in as compared with other styles of hives. The Corrugated Paper Bottom-less Box, Inner Overcoat, is telescoped down in between the outer and inner hive walls, when preparing them for winter. It is removed in the spring and stored away in the K. D. flat. Not more than two minutes are required to insulate a hive for winter or to remove it in the spring by this method. It is the simplest and most efficient method and does away with a great amount of labor. You have no packing cases or packing material such as shavings, sawdust, chaff or leaves to handle and bother with. Try out a quantity of these hives the coming winter as hundreds of others are doing. Bees are valuable these war times and you can not afford to lose them. Send for special circular showing 10 large illustrations.

TIN HONEY PACKAGES

2	lb. Friction top cans in cases of 24.....	\$ 1.15 per case
2	lb. Friction top cans in crates of 612.....	24.00 per crate
2 1/2	lb. Friction top cans in cases of 24.....	1.35 per case
2 1/2	lb. Friction top cans in crates of 450.....	20.00 per crate
5	lb. Friction top pails in cases of 12.....	1.10 per case
5	lb. Friction top pails in crates of 100.....	7.50 per crate
5	lb. Friction top pails in crates of 203.....	14.50 per crate
10	lb. Friction top pails in cases of 6.....	.90 per case
10	lb. Friction top pails in crates of 113.....	12.50 per crate

For a limited time we offer the above packages at these special low prices, shipment to be made from Chicago. Write for prices on 60-lb. cans, giving quantity wanted.

A. G. WOODMAN CO., Grand Rapids, Mich.

WHY???

Why is it that so many beekeepers prefer Dadant's Foundation? Why does it give such good satisfaction, and why is it that when tested side by side with many other makes beekeepers have reported that "they take to DADANT'S first."

Do We Use Special Sheeting Machinery? --- NO.

We use the Weed process of sheeting our beeswax into endless rolls, and it is the same process as used by nearly all manufacturers.

Do We Use Special Foundation Mills? --- NO.

We use the same kind of mills as are used by practically every foundation manufacturer in the world.

Do We Use Special Beeswax? --- NO.

We use beeswax such as is produced by beekeepers all over United States

Then WHY??

Because Our beeswax is cleaned in such a way that all impurities are removed, and all the fine qualities are retained.

Because Sulphuric and other acids recommended and used by many manufacturers for cleaning beeswax are not used by us.

Because Our motto is and always has been "EVERY SHEET PERFECT," and we live up to it.

Because For FORTY YEARS comb foundation has been and still is OUR SPECIALTY. When you get DADANT'S FOUNDATION you know that you are getting the best that money can buy. When you send your beeswax to us to be worked into foundation you know that you will get perfect work done. When you ship us old combs and cappings to render you will get the maximum of wax they contain; and, if desired, this wax will be worked into the finest quality of foundation made.

It is Up to You

Therefore, to insist on DADANT'S FOUNDATION when you order your goods from your dealer. If you can not get it from him then order of us. . .

Dadant & Sons, Hamilton, Ills.

GLEANINGS IN BEE CULTURE

SEPTEMBER, 1918

EDITORIAL

SINCE OUR August issue a number of our subscribers have written to us, saying that they had made application to the U. S. Food Administration, Sugar Division, at their



How to Get That Sugar for Feeding.

State capitals, for permits to secure sugar, but had received no reply, much less a permit. Several in our own State of Ohio wrote, but received no response.

To clear up the matter the Editor of Gleanings made a special trip to Columbus on Aug. 20 and there learned that Ohio beekeepers—in fact, beekeepers in every State in the Union—should first go to their local food administrator and ask for blanks marked A and B. Disregard blank A on the sheet and fill out statement B only. Put in your full name and address. Opposite the words "Bee Culture" make a cross-mark in the printed square, certifying your industry. Then fill out items 6 and 8. Item 6 calls for the amount of sugar used from July 1 to Oct. 1, 1917. You may or may not have used any; but if any, state the amount. Item 8 calls for the amount of sugar needed up to Oct. 1, 1918. When the blank is so filled out it should be taken before a notary or other official who can administer an oath, and sworn to in the space provided below, after which it is to be sent to the United States Food Administration, Sugar Division, of your State capital.

Ohio beekeepers, however, should fill out two blanks, and send both to Thos. K. Lewis, U. S. Food Administration, Sugar Division, Columbus, O. The notary will probably charge no more for two affidavits than for one. One of these blanks is to be filed by Lewis with the State Bee Inspector of Ohio, E. C. Cotton, Department of Agriculture, Columbus, and the other with the Sugar Division, Columbus. It would be a wise thing for the beekeepers of other States to furnish two sworn blanks so that one could be filed with the State Bee Inspector or State Apiarist, and the other with the regular Food Administration.

In some cases the State Food Administration may require that an officer of some bee organization pass on the validity of the claim of the beekeeper for sugar. In such case, where it is at all practicable, send the blank to the secretary or the president, and ask him to mark his O. K. across the blank,

signing his name as an officer of the bee organization, and return to you, when you are to send it to the U. S. Food Administration, Sugar Division, of your State capital. Most of the States will probably require something of the sort. Where there is no state or local organization, or when you do not know who the secretary of a local beekeepers' organization is, send your blank to the secretary of the National Beekeepers' Association, Floyd Markham, Ypsilanti, Mich., who will immediately return it to you provided you inclose a stamp and an addressed envelope.

The ordinary retail grocer probably will not have enough sugar to take care of beekeepers' requirements, and therefore you will have to go to the wholesaler. But before you do it be sure you are armed with the permit as above outlined.

The beekeeper should anticipate his wants early; and, if he needs sugar, make application at once as above outlined.



A STATEMENT made in two leading daily newspapers, to the effect that beekeepers

are profiteering, is based on the statement of Dr. Phillips of Washington, D. C., at the field meet at Medina, that any beekeeper who sells all his honey and asks for sugar, where there is no bee disease, is profiteering. One paper, the Cleveland News, has drawn the inference that beekeepers are using sugar to feed bees to sell as honey, and that in so doing they are not only "profiteering" but are "cheating" their customers. While we can not agree with Dr. Phillips that the beekeeper is profiteering when he sells honey and feeds sugar, it is but fair to him to say that he is quoted only in part. He never intended to convey the impression that beekeepers are feeding their bees sugar to sell as honey. Gleanings fears that this garbled statement may be scattered far and wide, with the result that beekeepers will be unable to obtain sugar this fall for feeding their bees. Accordingly, beekeepers everywhere should be prompt to refute this untruth. It would be nothing short of a real calamity for the beekeepers not to get the sugar needed, as it would mean a great decrease in the number of bees another year and a great shrinkage in the honey production of 1919.



This Is Not Profiteering.

THE EDITOR, in his last trip among some of the largest beekeepers of the country, found, among other things, that the largest producers were running more



Bigger Hives and Colonies

and more to large brood-nests. The Dadants have emphasized the importance of a large brood-chamber, favoring the large size put out by Father Quinby. They have shown that such a hive cuts swarming down to the minimum of one or two per cent, makes queen-excluders unnecessary, and reduces winter losses and labor.

In 1894 the editor tried out the proposition of whether he could accomplish these results with two eight-frame brood-nests, and found that he could, to a very great extent. If the reader will turn to the series of articles by C. A. Hatch, and footnotes and editorials written by E. R. Root in *Gleanings* for 1894 to 1898, he will find that we not only controlled swarming, but produced honey, with the advantage that our brood-nests could be handled in halves. But the objection to the eight-frame was that, in a good season, it might be too much of a sky-scraper—one that, when tiered up, would be easily tipped over by the wind or by stock running loose. The illustration on the cover page of this issue shows that an eight-frame width of hive sometimes requires bracing up to keep it from toppling over.

Since that series of articles was written we have found the whole beekeeping fraternity has been tending to a double brood-nest, either for eight or ten-frame Langstroth, for breeding early in the spring and then confining the queen down to a single brood-nest by means of an excluder at the approach of the harvest. The plan is almost universal among our largest beekeepers, because it is now generally agreed that a ten-frame Langstroth brood-nest is not large enough in the spring for a good queen, and therefore two are needed. Upon a good queen hangs the success or failure of a crop, other things being equal.

The average beekeeper contends that even a ten-frame Langstroth brood-nest is rather heavy to lift. The argument might be advanced that the eight-frame would be better so far as lifting is concerned; but in tiering up it becomes necessary for the apiarist to stand on a box or stepladder to get to the top of the supers when the season is good and the queen prolific.

We found in our recent travels that there is a pronounced tendency toward a twelve and thirteen-frame brood-nest. There is also a tendency, equally pronounced, toward a ten-frame Jumbo hive, which is practically the Dadant-Quinby, and of about equal capacity to the twelve-frame Langstroth hive. The advantage in keeping the size of the frame standard is obvious. The Langstroth frame is nearly universal, and so well adapted for extracting purposes, that one will think a long time before he will consider a

deeper frame—one that is not well adapted to extracting. The Dadants and all who use the Jumbo or Quinby depth of frame find it quite necessary to use a half-depth frame or one slightly shallower than a Langstroth frame for extracting, because the frame is too deep. The users of the Jumbo or Quinby frame are compelled to have the two sizes of frames—one for the super for extracting purposes and the other for the queen, for the queen is usually confined to the lower brood-nest, and that, too, without the need of an excluder, says Mr. Dadant.

In favor of the Jumbo or Quinby depth of frame, it may be said that our best beekeepers admit that a queen seems to prefer a large frame; and she will lay more eggs in one large card of comb than she will in the same number of square inches contained in two combs, one above the other, but divided from each other by a top bar, a beespace, and a bottom bar, as is the case when the queen occupies two supers. We have yet to run across a beekeeper who denies this proposition. From a strictly breeding standpoint the advantages are all in favor of the big frame. Moreover, there is a further advantage in that the Jumbo frame makes it possible for one to use a standard width and length of Langstroth hive—standard cover and bottom, standard comb-honey supers, standard Langstroth hive-bodies or shallow supers. In the apiaries we have visited, where Jumbo frames are used, we found numerous instances where the owners had bought up colonies in standard Langstroth hives, and were using them on top of the Jumbos for extracting.

On the other hand, the users of the twelve and thirteen-frame hives have nothing standard but the frame. The standard Langstroth and hive-bodies will not fit these hives.

However, one very strong argument in favor of the twelve and thirteen-frame hives is that an ordinary colony does not have to be tiered more than two or three stories high. The supers, while relatively heavier than the ten-frame Langstroth, are low enough down to be easily lifted. The twelve and thirteen-frame Langstroth hive has the advantage over the Jumbo or Quinby in that it will never be as high as the Jumbo of the same cubic capacity.

The excellence of the Jumbo or Quinby brood-nest as compared with the twelve and thirteen-frame Langstroth, is a matter to be settled by the future experience of beekeepers. So far as we have met beekeepers who are using the larger brood-nest, we have found they prefer to use hives requiring only one size of frame thruout the beeyard.

There is another small school of beekeepers who are working toward the Long Idea hive of thirty or forty-frame dimensions. This does away with all lifting of supers, providing that the extractor is used when a hive of this capacity is filled with honey. But it requires handling the frames individ-

ually instead of in groups of eight, ten, or twelve frames according to the size of the hive-body.

So far we have left the reader on the fence. What style and size of brood-nest shall he adopt?

The great majority of beekeepers have settled down to the proposition that the regular ten-frame Langstroth hive, while lacking some of the advantages of either the Quinby or Jumbo depth, or the twelve or thirteen-frame Langstroth depth, have the great point in their favor that **they are standard**. Supplies cost from 25 to 50 per cent less. As illustrating the advantages of standard equipment, let us say that the expert producer finds himself compelled to buy out a less successful and perhaps competing beekeeper who, perhaps, is encroaching on his territory. The latter, in all probability, will have standard equipment. If the survival of the fittest, or the more successful beekeeper, is using something that is not standard, he has got the everlasting nuisance of either a difference in the size of the frame or a difference in supers, hive-bodies, covers, and bottoms. This nuisance is intolerable; and altho the beekeeper may see the advantage of the larger brood-nest, yet he is almost compelled to keep standard equipment.

There is no denying the fact that there are hundreds of beekeepers in this country who are producing honey by the earload with the standard ten-frame Langstroth equipment. The eight-frame Langstroth size of hive is going out so rapidly that we can almost put it among the discards.

We have been taking a good many photos showing twelve and thirteen-frame hives, Jumbo hives, and the Long Idea hive; and in forthcoming issues of *Gleanings* we shall illustrate some of these different equipments and show their advantages. What we have here said goes to show that there is a strong tendency toward breeding in two-story brood-nests of Langstroth size, as well as wintering in two such brood-nests, or one such and a shallow-depth extracting-frame.

DR. E. F. PHILLIPS, with whom we had quite a long conference at the field meets in the State of New

Don't Fail to Pack Early

York, wished us to emphasize in September *Gleanings* that outdoor-wintered colonies should be packed early for the following reasons:

Unpacked colonies in late September and October are subject to extremes of temperature and frosty nights, with the result that a good deal of brood is chilled, and with the further result that the queen is discouraged from laying. When the colonies are well packed, says Dr. Phillips, they can be kept right on breeding clear up into November. Late breeding means young bees, and these are vitally important for wintering, either indoors or outdoors.

The second reason is that, if the colonies

are packed early, they become accustomed to the new surroundings; and before cold weather sets in they will be so accustomed to their entrances that they will not "drift," as will colonies that are packed late. One of the serious difficulties that beekeepers often encounter during the following spring is the "drifting" nuisance by which colonies will be either too strong or too weak. As their bees are not entirely familiar with the changed surroundings, the bees are liable to get mixed up by going to the wrong hive on the first good flight day. Some colonies get too many bees, and some too few. The former may starve, and the latter be chilled and die with dysentery.



THAT QUESTION is being asked hundreds of times. If one lives in a locality subject



Outdoor or Indoor Wintering

to continuous zero weather for weeks at a time, and especially if he lives in a hilly country

where he can have side-hill repositories, we would advise the indoor plan. The past winter showed that those who wintered in cellar, especially with side-hill cellars, had stronger and better colonies than those who wintered outdoors. This is not saying that bees can not be wintered outdoors in the colder climates. Some of our best beekeepers did it last winter and had rousing colonies in the spring.

In localities where the winters are more open, and the bees have an opportunity for a flight four or five times during midwinter, we would advise the outdoor method.

What shall the small beekeeper do who has only a few colonies? If he lives in a cold climate, he can winter in a cellar where there is a furnace. The bees should be in a room separate from the furnace room. Twenty-five or thirty colonies will winter in such a place very nicely, even in warm climates, if sufficient ventilation is provided; and this can be done very well by leaving the door ajar from the bee-room into the furnace room.

If one will properly pack in a milder climate, the chances of success are better outdoors than indoors. Control of temperature and ventilation in a cellar is a nice art, and beginners may not be able to master it.

In our next issue we shall have full particulars with illustrations on how to winter bees outdoors by the most approved methods. These illustrations will embody some features that proved successful last winter.

If there ever was a winter that proved conclusively that packing is essential for outdoor-wintered bees, it was the past one. Some of the beekeepers who argued for single-walled hives on summer stands have had their theories knocked into a cocked hat. While they are not saying anything, they are sadder and wiser—sadder because they had almost no bees this spring, and wiser because they will never do it again, if the Lord spares 'em for another chance.

THE severe winter of 1917-'18 — the hardest on bees, perhaps, in over 35 years — has brought its lessons. Those beekeepers that were

thoroly prepared with plenty of good stores suffered comparatively light losses, while those that were not prepared lost heavily. It will be the particular purpose of this article to explain some of the fundamentals of good wintering indoors, because plans for indoor wintering must be made as early as possible in advance. In our next issue we will give the various methods of outdoor wintering—those that proved to be successful during last winter.

The present high price of honey, the shortage of sugar, with the prospect that the Food Administration at Washington may cut all rations of sugar down still further, will cause some to favor the indoor plan of wintering. It is generally admitted that a colony in a good cellar consumes about half the stores that the same colony requires when wintered outdoors in a good packing-case. Or, to put it more concretely, a colony of bees in a good cellar consumes anywhere from five to ten pounds of stores during the period of confinement, while the same colony outdoors, well housed, requires anywhere from 15 to 25 pounds or even more. At this time we will not discuss the question whether the outdoors bees will be more vigorous and ready for harvest, for the big problem now is to bring

THE BEST CELLAR WINTERING

Some of the Fundamentals as Illustrated by the Continued Successes of Big Michigan Beekeepers

By E. R. Root

age beginner, or the average good beekeeper south of the Great Lakes, will secure better results by wintering outdoors; but the fact that most of those who wintered in the cellar last winter had their bees in better condition this spring suggests the wisdom at this time of inquiring how they succeeded.

The Editor has been giving the matter special consideration; and with that end in view he has traveled some hundreds of miles visiting some of the best beekeepers of the United States—especially those who wintered in cellars with little or no loss. After consulting some of our best beemen, and especially Government experts, we were especially directed to one man, said to understand with special thoroughness the subject of indoor wintering. He has wintered bees for the last 12 or 15 years in a cellar of his own design, with a loss of less than one per cent. That man is David Running of Filion, Mich.,—ex-president of the Michigan State Beekeepers' Association, and now president of the National Beekeepers' Association. He agrees as to wintering in almost every detail with that veteran authority, the late G. M. Doolittle. The fact that these two men came to precisely the same conclusions 30 years apart, the one

the bees thru the coming winter with a minimum of stores.

It would be a mistake for us to urge every one to practice indoor wintering, as the aver-

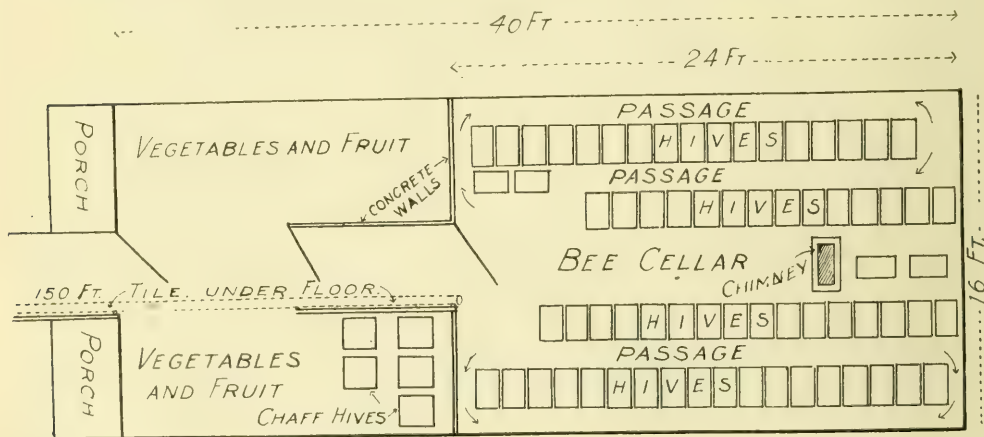


FIG. 1. This is a diagram of the ground plan of the David Running bee-cellar which has wintered bees for the last 12 years with a loss of less than one per cent. The cellar proper is built in a side hill. The bottom of the cellar is on a level with the ground in front. The walls are 6 inches thick, of concrete, with a concrete ceiling on top. Directly above the cellar is a concrete workshop and extracting house. Between the ceiling of the cellar and the floor of this building above there is packing material of one foot of dry sawdust and one foot of air space; and then another set of joists covered with matched flooring. Between the ceiling and cellar roof is 6 feet, and the cellar is capable of holding between 300 and 400 colonies. It will be noticed that there are three doors to shut out the outside cold. The hives are piled as shown in the diagram. The ventilator, or chimney, has a 9 x 13 flue which extends clear up thru the building above. The outer cellar is sometimes used for wintering bees in double-walled hives.

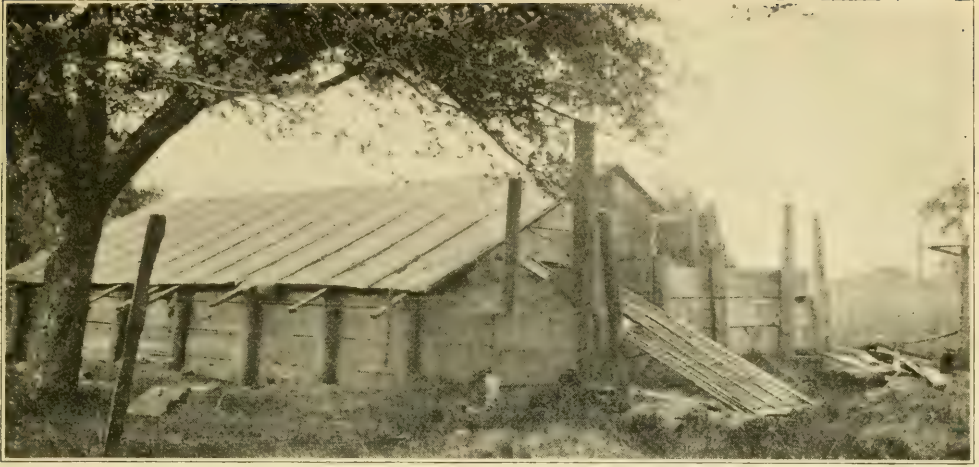


FIG. 2.—This is a lee-cellar belonging to Leonard Griggs of Flint, Mich. It is a type of an above-ground cellar embodying the ideas of David Running. The cellar proper extends into the ground about 3 feet. Then there is a three-foot embankment about 3 feet wide around the upper part of the cellar. The ceiling is covered with about three feet of sawdust. To keep the side embankments dry and frost-proof the roof extends entirely over the cellar, and embankment, except in front; and Mr. Griggs thought it would be a good idea to cover this also. Mr. Griggs has been uniformly successful in wintering bees in this cellar.

without the knowledge of the other, marks the information that we are now about to give as very important.

Mr. Running specifies that the whole bee-cellar must be well protected from both cold and dampness. It is not enough, he says, that the whole of the cellar be underground and the ceiling on a level with the ground, unless between the ceiling and roof is three or four feet of sawdust. Many and many a good bee-cellar gives poor results because the inside ceiling varies with

the changes of the outside temperature. A cellar where frost during severely cold weather can be scraped off the ceiling is badly designed and cannot be expected to give good results.

On account of the difficulty in obtaining proper drainage it is not essential, Mr. Running says, that the whole cellar be submerged $2\frac{1}{2}$ to 3 feet below the general surface of the ground to get below the frost line. In the great majority of cases the cellar will have to be partly above ground



FIG. 3.—This cellar would be well designed if the roof extended over the side embankment. As it is, it would seem that the roof water is washing away the embankment on the left. The embankment becomes water-soaked, causing the temperature of the cellar to become too cold.

and partly below. But the important thing is to remember that the part above the general level must be protected by four or five feet of embankment of dry earth. The ceiling of the cellar proper must be covered with at least three or four feet of dry earth or sawdust. Mr. Running has a workshop directly above his bee-cellar, making only a foot of sawdust above the cellar ceiling necessary. In order to keep the side embankments dry as well as the space over the cellar proper, it is important that the roof itself cover not only the width of the actual inclosure, but the embankment at the sides and ends. A wet or frozen embankment means a low temperature in the cellar and that is often fatal.

Mr. Running told us that he believed he could winter bees in a properly constructed winter bee-cellar even in Tennessee or in any of the Southern States with a great

this sub-earth ventilator continue in a vertical pipe to within a few inches of the ceiling. This would bring about a thoro circulation of air from top to bottom.

The entrance to the cellar is effected by means of double (or better, triple) doors thru a narrow passageway leading from the level of the ground to the bottom of the cellar. If the cellar is halfway below ground and halfway above, the entrance and exit are made easy by means of steps. If it is located under a side hill, so that the bottom of the cellar is on a level with the ground in front, the conditions are ideal.

To recapitulate: "The important thing to remember," said Mr. Running, "is to make the cellar room so that it will not be subject to any outside variations of temperature; and to prevent these variations the sides, end, and ceiling must have



FIG. 4.—This belongs to L. C. Gordon of Bellaire, Mich., and apparently has the same defect as Fig. 3. The owner said that in this 12 x 20-foot bee-cellar last winter he wintered 151 colonies, without the loss of a colony. According to David Running's idea the roof should have extended over the side embankment. But these embankments are made up of sand that dries out very quickly; and, in spite of the fact that it is not covered, it makes a good insulator. This cellar has the ventilation recommended by Mr. Running.

saving of stores. "For," he said, "it is acknowledged that where bees can fly one or more times during every week of the winter they will consume anywhere from two to three times the amount that bees in the North will eat." He would put them where the inside temperature of the cluster would be at the point of the least activity, or 57 degrees F.

Regarding the amount of ventilation, Mr. Running has been successful in the use of one ventilator in the back end of the bee-cellar about 9 by 13 inches, extending thru the roof, and surmounted at the top by a chimney. This shaft should extend down to the level of the cellar floor. This is for the outlet of foul air. The inlet consists of a sewer pipe running under ground, opening into the front end of the cellar. Altho he has not used it, he believes it would be an advantage to have the inlet of

enough protection of dry earth or sawdust to keep the bee-cellar at the right temperature.*

The temperature of Mother Earth, according to Mr. Running, is about right for cellar wintering. Mother Earth varies all the way from 41 to 50 degrees. Mr. Running said the best results in a cellar would be where the variation of the temperature is between 43 and 47 degrees; and from the interviews that we have had with those who have followed his ideas we have come to the conclusion that an average of 45 degrees is about right; for at that temperature the bees inside of the hive approach nearly the temperature of the least activity—57 degrees Fahrenheit, which temperature has

*In localities where there are deep snows less insulation would be needed; but, as there are some winters with little snow, it is well to have a large dry dirt embankment.

been carefully determined by the Government experts.

In later years there has been a tendency toward a higher temperature—50 to 55 F. This is because, in house cellars, a lower temperature can not be maintained; but where it can be regulated to a nearly uniform point by Mother Earth 45 is probably better.

So far we have not touched on the question of food nor the age of the bees: Mr. Running said that of course he would much prefer good stores, for when good stores are used, there is no spotting of the hives when the bees are taken from the cellar in the spring, even if they have been confined from four to five months. But tho the bees will not winter as well on poor stores as on good, still if they are wintered in a properly constructed cellar, the amount of stores consumed by the bees is so small that no serious consequence occurs.

He says that many times the beekeeper can not have young bees, and many times he will have to put up with inferior stores. But he is strongly of the opinion that if bee-cellars were built right—and that, of course, means proper drainage and protection—one could winter any kind of bees. When the cellars are not properly protected, good stores and young bees are almost a necessity.

So much for David Running's methods—methods that are in use in Michigan, where good results have been secured.

Wintering in an Ordinary House Cellar.

Wintering in an ordinary house cellar is possible and practicable; but it should be understood that a house cellar is much more subject to variations of temperature, either on account of the presence of a furnace in the adjoining room to heat the house, or because of the exposure of the walls above

ground to outside temperature, which is always very variable. Our own experience has shown that where the temperature inside is variable—from 40 to 65—there must be a large amount of ventilation, especially at the higher points. We have had most excellent results with the temperature ranging between 55 and 60; but when the temperature is as high as this there will be a loud roar from restless bees, unless there is a constant interchange of air. It is a little



FIG. 6.—Another of Mr. Sowinski's bee-cellars.

difficult to bring this about in an ordinary house cellar; but where there are a few colonies—10 to 15—in a room 10 x 12, the matter of ventilation is not hard to overcome, especially if the door leading from the bee-cellar into the furnace-room is left slightly ajar. It is put down as an axiom that 10 colonies in a house cellar will winter better than 50 or 75 colonies, provided the temperature does not go below 40. If the cellar is not frost-proof—that is, will not prevent vegetables from freezing—it



FIG. 5.—This cellar (7½ x 25) belongs to Peter Sowinski of Bellaire, Mich.; so also does the cellar (7 x 30) shown in Fig. 6. Mr. Sowinski wintered 285 colonies in these two cellars without loss. The embankment in Fig. 6 appears to be covered. The home cellar, Fig. 5, embodies all the ideas of David Running. We went into this cellar at the time of our visit, and, notwithstanding the temperature was 80 degrees in the shade outside, it was down to 45 in the cellar. Mr. Sowinski keeps his vegetables, butter, eggs, and other food stuffs in this cellar. The drinking-water, kept in jugs here, seems to be as cold as ice. The scheme of ventilation was the same as Mr. Running's.

will be a very poor place for bees. A cellar reeking with dampness is also bad, altho bees have wintered well in house cellars where there was a large amount of dampness; but it was because there was a temperature not lower than 45. We are not so sure but that 50 would be better.

The question of whether the hives should be carried into the cellar without the bottom-boards will depend on conditions. In cellars of the David Running type the bees should be put in with hive-bottoms and covers sealed down. Mr. Running uses an entrance $1\frac{1}{4}$ inches deep running the width of the hive.

Stores.

Usually a single brood-nest will have enough stores to carry the colony thru winter in the cellar; but some beekeepers—notably Leonard Griggs, one of the most successful producers in Michigan—give to every colony they put into a cellar a half-depth super of natural stores. This is in

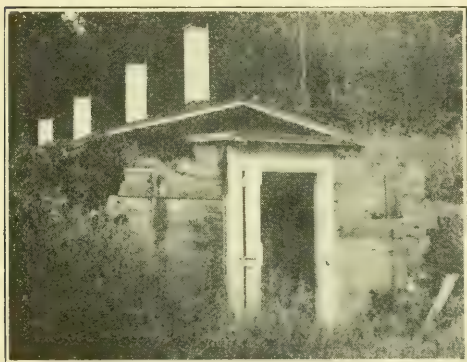
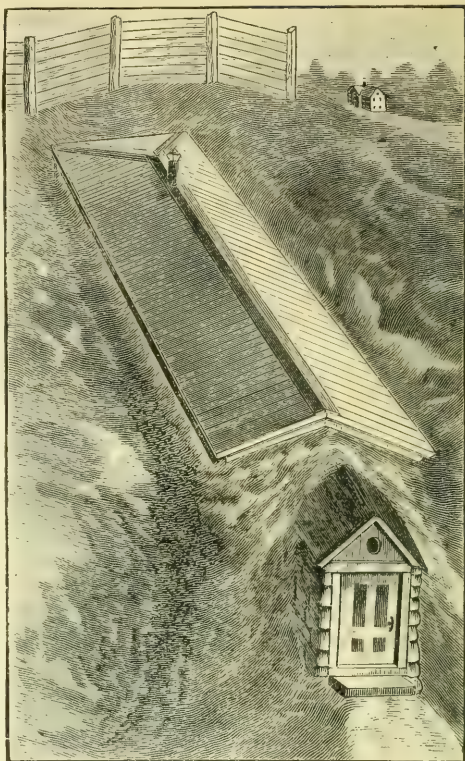


FIG. 7.—This cellar belongs to Ira Bartlett of East Jordan, Mich. He had some heavy losses in the cellar, which he attributed to bad stores and old bees. When asked if he didn't have too much ventilation, as shown by the ventilators, he admitted that that might be true. The sides and embankments are not covered by a roof, as will be noticed, and the result is that the temperature varies.

addition to what the lower story may or may not have. In this connection Mr. Griggs follows Mr. Running in the construction of his bee-cellar. See Fig. 2.

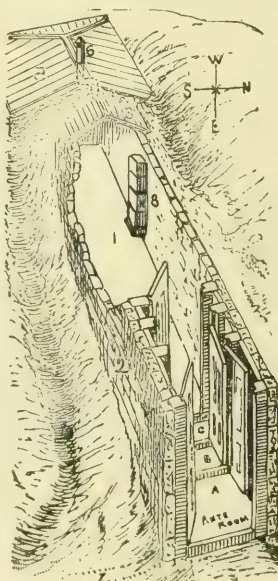
How to Build a Bee-Cellar.

So far we have given no specific directions how to build a David Running cellar. See Fig. 1 and legend beneath. Where the clay is firm and will not cave in, sustaining walls are not necessary. But in most localities a wall or a board siding is very necessary. Concrete walls are probably cheapest in the end. Where the cellar is temporary or on rented land very good bee-cellars have been built by using cheap boarding nailed against wooden posts. Mr. Brown of the Western Honey-producers, Sioux City, Ia., makes four holes in the ground with a post-auger. These holes are deep enough so that an ordinary fence-post will stick above the ground three or four



Exterior view of the bee-cellar of the late G. M. Doolittle. Note fence in rear.

feet. The boarding is then nailed inside of the posts above ground. The man then gets inside of the inclosure, digs an oblong pit deep enough so that he will have about $6\frac{1}{2}$



Interior view of the bee-cellar of the late G. M. Doolittle, shown as if part of the roof was removed.

feet between what is the top ceiling of the cellar-to-be and the bottom. The inside dirt is thrown outside of the wooden barricade. This leaves an embankment of four or five feet of earth. He uses no sustaining walls in the lower half of the cellar. A ceiling is then put on, and then a gable roof is made to cover the embankment as well as the cellar proper. On top of the ceiling and under the gable roof is put from three to four feet of sawdust.

In our next issue we shall give the latest methods for packing bees outdoors.

G. M. Doolittle on Cellar Wintering Nearly 30 Years Ago.

After we had written the first draft of Mr. Running's methods, we began going back in our mind to the time when we first took hold of Gleanings in 1885. We recalled that we visited Mr. Doolittle in 1890, and at that time we were much interested in his cellar where he had wintered his bees so many years successfully. The result was that we asked him to write it up. The illustrations for his article appearing in Gleanings at that time (and later printed in the A B C of Bee Culture) are here reproduced. By consulting these old woodcuts it will be seen that Mr. Doolittle was

long ago an advocate of the very principles that David Running has found to be so successful. One of these principles was a roof projecting over the side embankments. The other was a cellar ceiling below the frost-line. The series of doors in the hatchway leading into the cellar proper are very much the same. Mr. Doolittle believed in a temperature of 45 degrees and a very moderate amount of ventilation. The hole in his ventilator was 6 x 8 inches. A sub-earth ventilator was about the same size as that used by Mr. Running. Perhaps it would be well to mention that Mr. Doolittle in his later years thought less and less of ventilation until he finally abandoned it. In this we believe he made a mistake. However, Mr. Running says that if the temperature can be maintained uniformly around 45 very little ventilation is required. It might be well to mention also that a fence was put in the rear of Doolittle's cellar so the driving snows would completely cover the roof—not a bad idea; and it goes to show that he was thoroly in accord with the idea of having plenty of top protection. Mr. Doolittle used to say that the variation of temperature in his cellar did not exceed two degrees during the entire winter.



IN many of the Northern States the month of September brings an epoch in the life of the colony, for it ushers in the broodless period of fall and winter. Thruout the spring and summer it has been necessary for the bees to rear large numbers of young to replace the wastage of bee life incident to the toil and struggles of the active season. This replacement of worn-out bees is now temporarily discontinued, and the colonies attempt to make their future existence secure by another method—a slowing-down of the expenditure of bee life.

In order to dispense with brood-rearing entirely until March the colonies must reduce tremendously their daily energy output, for, if they should spend at the same rate as they do in the active season, all of the worker bees, present in our hives on October first, would die of old age before Thanksgiving Day. We know, of course, that the bees slow down their activity during any lull in nectar-secretion, seemingly, always on the lookout for an opportunity to save their energy. Under certain conditions, therefore, even during the summer the individual workers may live much longer than the six weeks which is general-

IMPORTANCE of WINTER STORES

*Quantity, Quality, and Arrangement.
The Last Stores Gathered by the Bees
or Fed to Them Should be the Best*

By Belva M. Demuth

when brood-rearing ceases. It is then that bee energy becomes the best of colony assets.

We have, therefore, at the beginning of the broodless period, a stop-gap crew of worker bees, whose only business in life is to live so slowly that their lives shall be prolonged to several times that of the more active preceding generations, and finally, before the spark of life goes out, to nurse into being a spring crew to take up again the life of the colony. This slowing-down of colony activity is well known among beekeepers and has been aptly described by Dzierzon as follows:

"The vital activity of the bees varies a great deal according to circumstances and the time of year, and the quantity and quality of food necessary are dependent thereon. The quantity of honey which a bee is able to hold in its stomach may, under certain circumstances, afford it ample food for more than a week; and, under different circumstances, may be insufficient to prevent death from starvation within 24 hours. If we compare life to a process of combustion, then a bee's life is at one time like a spark glimmering under the ashes, and, at another, like a bright flame which

ly accepted to be the normal span of life during the active season. The supreme effort toward energy-saving and life-prolongation, however, begins

in a few minutes consumes the combustible matter that would have fed the but glimmering fire for a much longer time."

The climate in "our locality" is such that this quiescence, so necessary to slow living, is easily upset; and, if we are not careful, we may have, even in December or January, activity more like the consuming "bright flame" than like the "glimmering spark." Wintering, therefore, so far as the beekeeper is concerned, means providing conditions favorable to the greatest possible degree of quiescence on the part of the winter bees.

The effort of the beekeeper in this direction during September is largely concerned with winter stores. The quantity, quality, and arrangement of winter stores each have much to do with the degree of quiescence as well as with the length of such period.

Quantity of Winter Stores.

It is important that every colony shall have, at the close of brood-rearing, an abundance of stores both for winter use and for spring brood-rearing. They may need 10 pounds for winter and 20 to 30 pounds more for spring; but it should all be in the hives this fall, not necessarily because the larger amount may affect the quiescence of the bees during winter, but because the bees will need it in the spring before it can well be supplied.

Quality of Stores.

Most beekeepers know what a tremendously disturbing factor poor winter stores become when the bees are confined to their hives for some time. In this connection, it is interesting to note that cellar wintering has been found satisfactory only in those regions which furnish year after year winter stores of the best quality, or where the beekeeper practices feeding sugar syrup to supplement the winter stores. Cellar wintering is practically impossible when honeydew is mixed with the honey stored at the close of the season, unless the beekeeper feeds for winter. Even when bees are wintered out of doors and are fortunate enough to have a cleansing flight about once a month, the disturbance during the interim must be extremely costly in bee energy. When the stores are poor an enormous quantity is consumed, and colonies sometimes live so rapidly under such conditions that they consume all they have and starve, providing they do not first use up all their vitality and die of old age in midwinter.

It is fortunate for beekeeping that in the extreme North where the bees are confined to their hives several months without a cleansing flight, the winter stores average much better in quality than farther south. If the reverse were true, it would not be possible to winter bees on natural stores in the far North. Last winter some of the most severe winter losses were reported from the middle latitudes; due, no doubt largely to the character of the stores.

Arrangement of Winter Stores.

It usually happens that the very best hon-

cy stored during the summer is either all removed as surplus, or is stored in the brood-chamber most remote from the winter nest. As the season draws to a close and brood-rearing is decreased, the cells left vacant above and back of the decreasing brood-nest are filled with the latest-gathered honey, which is usually inferior in quality to that gathered during the height of the honey flow. This arrangement of the stores causes the bees to use the poorest honey first as their winter food, leaving the best honey for spring brood-rearing. This is exactly the reverse of what it should be for best results. If the stores are so arranged that the best honey is used first, the activity of the bees is greatly reduced, and they must live correspondingly longer. Furthermore, if only the best of stores are used during the broodless period, a surprisingly small quantity is needed if the bees are properly protected. Even five pounds of either heavy sugar syrup or the best of the early-gathered honey stored in the margin of the winter nest may save, under some conditions, several times that amount in the total consumption of stores during the winter, to say nothing of the decreased wastage of bee energy. This better condition is readily brought about by feeding this amount of sugar syrup or honey after the brood has emerged, when it will be placed in the margin of the winter nest where it will be used first. Thus if the bees need five to ten pounds of stores during the broodless period and twenty pounds for early spring brood-rearing, the five to ten pounds should be of the very best quality and so arranged that it will be used first. With this arrangement the quality of the remaining twenty or more pounds does not materially affect the results, for this is used when the bees can have more frequent cleansing flights. Colonies may be uniform on the first of October as to strength, age, and vitality of bees and even as to quantity and quality of stores, yet if the arrangement of the stores in all colonies is not such that the best of the food is available for use first, there may be a great difference in the way they winter. Some colonies may have put in a few pounds of inferior honey late which, being used first, upsets the quiescent condition quite early. In the absence of a cleansing flight such colonies may winter poorly, even tho the remaining twenty-five pounds or more of stores may be of the finest quality.

Uniform results in either cellar or outdoor wintering in many localities will probably never be attained, unless the beekeeper makes it a practice to feed to each colony already provisioned an additional five or ten pounds of either a heavy sugar syrup or the best early-gathered honey. This feeding is done after the brood has emerged and too late to have it again covered up with later-gathered stores from the fields.

The arrangement of the stores in relation to the winter nest should not be dis-

turbed later by changing the places of the combs, for in the subsequent rearrangement the bees might carry some inferior honey or honeydew from some other part of the brood-chamber and put it into the inner circle of stores.

The time for this feeding in the North is usually late September or early October. If at this time each colony has plenty of young and vigorous bees (see page 462, August Gleanings), plenty of stores for both winter use and spring brood-rearing, and if a quantity of these stores sufficient

to last until March is of the best quality and so arranged that it will be used first, we have most favorable pre-winter conditions. If to such colonies we add adequate winter protection, either by packing them well in a sheltered location out of doors or by housing them during the cold weather in a comfortable dry cellar, we have provided conditions which should enable the winter crew to live so slowly that they will be able to hold the fort until the arrival of reinforcements in the form of young bees next spring.



As explained editorially in our July issue, page 393, beekeepers now enjoy the privilege of sending bees in one, two, three, and five-pound lots by mail. Our dear Uncle Samuel up to this time has granted every reasonable request that has been made by beekeepers, and not the least of these by any means is the ruling that now permits the sending of bees by parcel post in suitable cages.

During the last two or three years, conditions brought about by the war have greatly delayed express shipments of bees. In a few instances the express companies declared embargoes on bees. While these restrictions have since been lifted, the fact remains that bees in package form by express have been greatly delayed. In many cases there have been losses of 50 and even 100 per cent; and while under normal conditions express companies could have been held liable, and are legally liable now for any unusual delay or carelessness in handling, yet experience shows that it will be a long time before any claims are satisfied, even if they are ever taken care of.

These claims of delay and loss of bees

THE CAGE THAT WILL DO IT

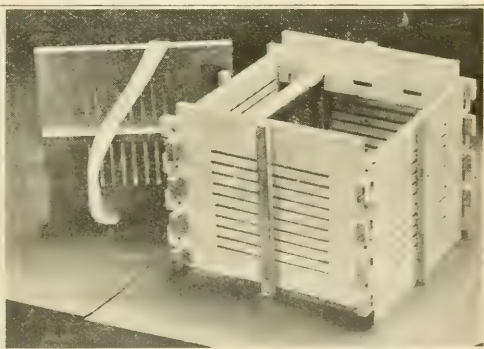
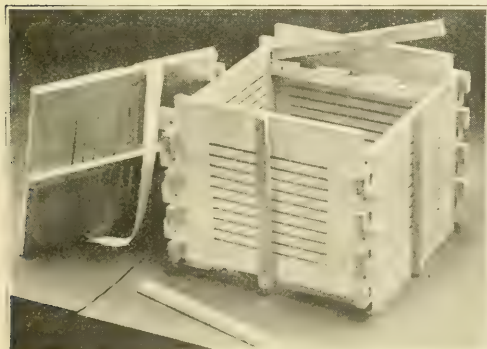
How the New Postal Order Allowing the Shipment of Bees in Pound Packages May be Made Use of

By E. R. Root

urging the necessity of the privilege of sending bees by mail. We explained the delays that the express shipments of bees were receiving, and how the bees were dying en route as they had never done before; that there had been very heavy winter losses east of the Mississippi; that there was a shortage of bees in some parts of the country and a great plenty in others. We showed that it is impracticable to send bees in carlots, owing to the congestion of freight; that unless the beekeepers of the country could have the parcel-post privilege of sending bees in package form without combs, the industry would suffer materially.

At the last interview we submitted evidence from shippers from all over the country, showing how bees have been lost in shipping by express. We met very favorable responses at each of the interviews, and finally the Department, as told in our July issue, issued a ruling making it possible to send bees in quantities by mail, as has been

in shipment led Dr. E. F. Phillips, Apicultural Investigator in the Bureau of Entomology, and the writer, to appear before the Postoffice Department,



The cage for shipping bees by mail that the postal authorities favor. Notice the frame of foundation in position in second cage shown above.

done heretofore with queens and a dozen or so of attendants.

We submitted two forms of shipping package to the Department; but the one that eliminates the use of wire cloth entirely, using saw-cuts thru the sides of the box, appealed to the Department officials as feasible, practicable, and safe. We explained that this cage had no patent on it, and that any one could make it; and from preliminary trials that had been given it, excellent results had been obtained. This cage was first submitted to us as a suitable mailing-cage by E. J. Atchley of California; and it would be no more than proper to call it the Atchley mailing-cage.

While cages using saw-cuts without wire cloth were used quite extensively for sending queen bees and a dozen or so of attendants, some 25 or more years ago, no one ever thought of the same principle for sending bees in larger quantities by mail until Mr. Atchley submitted his cage.

The subjoined illustrations show cages made of basswood, the panels of which are $\frac{3}{8}$ inch thick, with saw-cuts $\frac{1}{8}$ inch wide* and $\frac{3}{8}$ inch apart. This box, with its ventilated sides, ends, top, and bottom, is further reinforced by cleats that not only strengthen the cage but prevent it from coming in close contact with some other parcels, thus shutting off ventilation. The projecting lock corner teeth are for the same purpose.

The inside of the cage is provided with one or more miniature frames that contain strips of foundation. This last idea was the suggestion of Mel Pritchard. Why the foundation? Mr. Pritchard reasoned in this way: When bees are sent in boxes or cages without combs the environment is unnatural. The bees become discontented, worry, and when they get to worrying they soon die. His idea was that if bees were given a chance, they would draw out the foundation and build the comb. Such comb would be perfectly free, of course, from any possible taint of disease; for it is a well-known fact that a colony having American foul brood will be cured if put in a clean hive on clean frames of foundation. The same treatment has been very effective for curing European foul brood as well.

To test out this principle of bees building comb en route, we had some cages made early in the season—in fact, they were nothing more nor less than nucleus boxes with full-sized Langstroth frames containing half-sheets of foundation, a box of water, a box of candy, and a box of syrup. These cages were sent to different points, even as far as California. Pounds of bees were put in them, and sent back to Medina. As Mr. Pritchard fully expected, the foundation was drawn out into comb en route, and in some cases larvae and eggs were found; but, more remarkable, the bees came

thru in every case these long distances without any greater loss than two or three dead bees to the box.

If Mr. Pritchard's idea is correct (and we now think it is), it solves the problem of sending bees by mail or express. That idea, joined to the Atchley cage, ought to make bees by express or mail in package form an assured success.

But, as we have pointed out before, it is absolutely necessary that the Department ruling as to the style of cage be adhered to exactly. It will not do for any one to try any experiments. The old cage used for express shipments will not do. If a wire-cloth cage is adopted, there must be two thicknesses of screen separated by slats $\frac{3}{8}$ inch in thickness. Obviously it would be better and cheaper to use the saw-cut principle and eliminate the wire cloth entirely.

It should be noted, however, that Uncle Sam assumes no responsibility for bees going thru in bad condition. If bees arrive dead, either the shipper or the consignee must stand the loss. That will be a matter that will have to be adjusted between the two parties—and should be definitely agreed upon in advance.

As a matter of fact, the present extraordinary conditions do not make express shipments of bees any better; and, moreover, the express companies charge a rate and a half, while bees in parcel post will go thru at the regular zone rate, which will be on a par with a single rate of express, and in many cases less.

From the fifth zone up and over 15 pounds, express is cheaper. In zones one, two, three, and four and up to 25 pounds, parcel post is cheaper.

In order to try out the cages, we decided to ship packages to some distance (both one- and two-pound sizes). We accordingly sent some of these packages from Medina to Washington, D. C. Upon arrival at Washington they were given no attention whatever but were immediately reshipped to us. These packages were five days en route, and yet were returned to Medina in fine condition, with no more than a dozen or so dead bees in the bottoms of any of the cages. This trial proved conclusively that bees may be sent much safer and cheaper by parcels post than in any other way. It also convinced us of the value of Pritchard's idea of sending the bees on small frames of foundation, accompanied only by bee candy; for not only was the foundation all drawn out into comb, but also good worker brood had been reared en route, so that on arrival all that was necessary was to lift out the three small frames, place them side by side in a standard frame and insert in the nucleus hive. By making use of foundation there is no danger of spreading disease with such a package; and since there is brood on their arrival, there is no danger of the bees being discontented with their new hive. The package is a decided success.

*The saw-cuts should never be wider as bees would go thru. Three thirty-seconds-inch width is about right.



CONVERSATIONS with DOOLITTLE

Stores for Winter—How Much and How to Know When There Are Enough.

"Several of my colonies starved last winter on account of lack of stores, and I do not want such a thing to happen again. Will you tell us in *Gleanings* how much should be allowed for each colony in October, in honey or its equivalent in sugar syrup, to carry an average colony thru till the flowers bloom in the spring?"

Something depends on what is meant by an average colony; and much more still, whether the colonies are to be wintered in the cellar or on the summer stand, or what is termed, "out-door wintering." For this latter, bees should be allowed not less than twice enough to carry them safely over an ordinary trying winter. Last winter was one of the most trying sort, and it is no wonder that many colonies went short of stores, where they were at the mercy for days and weeks of from zero to 20 and even 30 degrees below. No colony should start in October with less than 25 pounds of good stores in the northern half of the United States or Canada, as a minimum amount, where the colony is to be left out on the summer stand, no matter how well packed and protected, and 40 pounds would be far preferable. Some of our practical outdoor winterers say 50 as the maximum, but nine winters out of ten, 40 will carry them safely thru till spring, when, if any are in need, they can be supplied with enough to carry them till fruit bloom.

For cellar wintering, we have more nearly a uniform temperature, from the time the bees are put in the cellar to the time they are taken out, so that we do not need to vary but little on the amount of stores to meet the variation of temperature outside. With a cellar whose temperature can be kept during the five months the bees are in it from 42 to 48 degrees, not more than two pounds will generally be consumed each month or ten pounds in all as an average. To be safe, I always try to make the amount 20 to 25 pounds, beginning with October 1 and ending with May 15. If I find an occasional colony with only 15 pounds, I allow it to go in the cellar with that amount, rather than to go thru the process of feeding, especially where I am short of feed in the fall. But such hives are marked so that as soon as the bees are out of the cellar, all such colonies that are light in stores can be supplied enough to carry them thru till fruit bloom.

But some one may ask, "How am I to know how much honey any certain colony may have?" At a convention some years

ago the following was given out as the right way to ascertain in this matter. "Put into an empty hive the number of combs used in wintering, and weigh the hive so arranged, when the hives in the apiary are to be weighed, the amount of the other deducted, and, if there was 40 pounds left above this deduction, there would be sufficient stores in that hive for wintering on the summer stands, and if there was 15 pounds, it would do very well for cellar wintering." But I can hardly put this plan out for anyone except those who are willing to look after their bees on the first warm day that the colonies can have a flight. Hives subject to the weather weigh more than dry hives, colonies differ very much as to size and weight, old combs weigh double that of new combs, combs from a colony that was queenless for some time during the summer will often contain pollen to one half the amount allowed for cellar wintering, and, for these reasons it would be well to add 10 pounds to the amounts given so as to be on the safe side. If our bees are in single-wall hives that may be readily handled, take any hive of the same pattern which may have been standing out, and put in it the same number of old empty combs as are in the hives having bees in them and proceed in this way: The hive with old empty combs weighs, say, 20 pounds. Now allow 5 pounds for bees and beebread, this making 25 pounds. If to be wintered on summer stand, we add 40 pounds as the necessary amount of honey, making 65 pounds as the weight necessary for each full colony, to put the same in good condition for winter, so far as stores are concerned. If to be wintered in the cellar, then, instead of the 40, add 25 pounds as the necessary amount of honey, thus making 50 pounds as the weight for a full colony where cellar wintering is practiced. If you are to winter on the summer stands, weigh a few colonies till one is found that weighs the 65 pounds required. Now lift, or "heft" this hive, as we used to say, a few times carefully, till you have a good conception of its weight, and, if you lose that conception at any time, come back and lift it again. Having a good idea of this weight, you can now go rapidly over the apiary, lifting each colony just clear of the ground, always taking the same position in this operation, and marking with a small stone each one that is doubtful or light. If there has been a good fall flow of nectar, most of the colonies will be over the 65 pounds in weight, some running to 70 and 75 pounds, and all such require scarcely more than a "taking hold" to determine their satisfactory condition. Next weigh each of the doubtful and too light ones, placing the

FROM THE FIELD OF EXPERIENCE

scales on a box or adjacent hive for that purpose, and mark the weight at a certain place on each hive. After the weights are determined, it only remains to put the light ones in condition for winter by uniting, by supplying them with the needed frames of honey from the store room, or with sugar syrup. And this holds good for those to be wintered in cellar except that 50 pounds is the standard instead of 65.

Borodino, N. Y.

G. M. Doolittle.

INEXPENSIVE WINTER CASES

But They Seem to Protect the Bees and to be Easy to Provide

My winter cases are composed of any cheap lumber that will hold a nail. The end is made of four pieces, 28 inches long, and one 30 inches, so the front is the highest, and covered with tarred paper or rubberoid. As to length of cases, I generally make them about 52 inches long so there will be nearly 8 inches of packing at each end. For a roof or cover I find that two gable covers are the nicest, as they can be used in summer time. For winter I lay an extra piece of tarred paper across the center to reach over the top of each. When summer comes I stack the cases to one side and put the packing in them for another season; and I save for packing any grass that may be cut. The last hard winter I

lost only three colonies—one from starvation; the other two had honey, but were affected by dysentery. We had a very hard winter. They were more than 100 days without a flight, and many colonies were affected. I generally winter in two bodies, even if one is only a shallow Danzenbaker extracting body. I also give bottom protection for all hives that stand up from the ground.

With care, the cases here described should last for years. I have used some of them for eight years, and they are still as good as new.

J. B. Holsinger.

Johnstown, Pa.

AN INEXPENSIVE PACKING CASE

How a Kansas Man Has Solved the Problem in His Country of High-priced Lumber

Out here in Kansas lumber is mighty high—perhaps not higher than in some other places, but high enough so that making the quadruple packing cases would mean a big expense. Picking up packing boxes that would do is out of the question. When one is “picked up” it is at a price of about \$1 and then has to be rebuilt. Getting together enough lumber or boxes for my 150 colonies of bees seems too big and too expensive a job for me when I have a cheaper way that appears almost as good to me.

After extracting is over I put a deep or



The apiary of J. B. Holsinger made ready for winter.

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shallow extracting-super of combs under every brood-chamber. Over the brood chamber I put a box that I make myself out of 1x4 stuff, and which is the size of the hives, outside measure. A piece of burlap is tacked over the bottom. Inside I place five or six newspapers on the bottom of the box, fill the box with planer shavings, and then cover with more papers on top. This box is set on top of the regular super cover. Over the box I put a sheet of one-ply roofing paper, folding it down over the sides and ends of the brood-chamber, and fastening it with tacks and tin washers. On top I place the regular cover, put the regular entrance contractors in, and my bees are packed for winter.

The winter of 1916-'17 was a normal winter, with the exception of two very cold days. The mercury went down those two days 20 below and there was a 50-mile gale blowing about all the time. Unpacked or partially packed bees in my neighborhood suffered very severely. Mine were packed as described, without a windbreak except a short strip of hedge on the west and a chicken wire fence on the north, and I lost only 8 out of 135. The eight lost were in hive bodies without the extracting-supers under them, with one exception, and that one came thru weak and queerless.

It will be seen that the bees are in the top brood-chamber with the top of that well insulated with the box of newspapers and planer shavings, and the top part of the sides covered with roofing paper, which covers the joint of the box and hive. The paper being waterproof keeps all moisture out, even if the cover is not on. The heat is easier kept with the entrance so far below the bees. I have not yet seen a wet hive inside. The boxes are left on the hive the year round as they are a good insulator against heat as well as cold, and are kept on the bees as handily as if they were taken off and put somewhere else. The paper will last several years if taken care of. It should be put in a building and set up endways or edgeways.

My bees look good early this spring (when this is written) despite the very severe winter weather just experienced.

Sabetha, Kan.

Frank Hill.

THE QUESTION OF FEEDING

A Kind of Feeder that Has the Approval of a Veteran Beekeeper

During the Watertown, N. Y., convention, Mr. Loutes gave his method of feeding. In his address he described a feeder designed by Mr. Elthorp, and said he had used about all the feeders invented and had settled on Mr. Elthorp's.

It should be remembered that nuclei need

plenty of feed to bring them thru the winter. If poorly fed, they are one of the poorest properties a beekeeper can have. To build a nucleus up, Mr. Loutes advised, during the early autumn, to give about two tea-cups of syrup at a time stimulating them to brood-rearing. He believed the latter part of September the best time to feed bees for winter. In other words, feed as late as possible. If fed early, the bees will use the stores for brood-rearing. Mr. Loutes weighs the colony about Oct. 1, and feeds with a pan feeder set under the brood-chamber. He puts the food on towards night, leaving an entrance only $\frac{3}{8}$ inch square. His feeders will hold 20 pounds of syrup or more, but feeding at that time he never feeds that much. The syrup is given to the bees warm. Any normal colony will take up the feed in one night.

Mr. Loutes first used floats in the pan feeders to keep the bees from drowning in the syrup. This did not suit him, and he put cheese-cloth on top of the float. He now uses excelsior, which is both cheap and serviceable, putting enough of it in to let the excelsior touch the bottom bars of the frames above.

He said the question might be asked: Does it pay to feed sugar syrup to the bees. He thought it did. The honey most suitable for winter stores is early-gathered honey. First in order is the clover. The dandelion and apple-blossom honeys are not as good. Candied or granulated honey he considered to be of little use to the bees. He said when the nights were cool, Mr. Elthorp closed the entrance entirely when feeding. (We must remember he referred to October nights.)

R. F. Holtermann.

Brantford, Ont.

HAS WINTERED IN MANY WAYS

But He Now Gives All the Preference to a Side-hill Bee Cellar

As I commenced keeping a few bees in 1882, I have tried many ways of wintering. I have even tried burying them. They wintered well, but it was a lot of hard labor. The next best way proved to be a house cellar where a family lives above, or at least where there is a fire above. One year I had bees in a cellar the ground floor of which was frozen for some time. The following spring there was a heavy loss. It was so cold that the bees ate only what was within their reach, and chilled and died with lots of honey in the hives. If you find it freezing for any length of time, start a fire in the cellar in some way and warm it up. The poorest wintering I experienced was in the cellar of a vacant house which was used for a beehouse. The cellar became cold and remained cold. When the sun

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warmed up it never reached away down into the cellar. The result was very poor wintering. The next season I put building-paper over the floor. I put on some hay and tried it again. But I had heavier losses than ever—more each time than a good bee-cellar would cost.

In one's own cellar he can control matters. Last winter my son and myself, in wintering in seven different places, found it not so easy to control things away from home. The farthest yard is 40 miles distant.

The best wintering with least labor and least expense I have ever tried, in the long run, has been a cellar in a side hill. In the first one I built, I left dirt sides, as the ground was very hard. There was just a little wall at the top where the dirt bothered by falling down. But since then I have found it best to lay a stone wall up from the bottom. The last one built suits me perfectly. The bees are on a flat at the bottom of a side hill, where they have fine pasturage. These are 35 miles from home. I had the farmer living where these bees are located pick out a spot for the cellar where the snow drifted deepest over the hill. He reports that every winter now the cellar is out of sight, as the snow is usually 10 feet deep above it. This is very important, as very few temperature changes occur under that amount of snow. This cellar goes in the bank on a level with the yard. There is just enough slope to the floor so that if there is any water it will run out at the door. On opening the first door you come to a five-foot vestibule leading thru to the second door. This is a very important arrangement, as frost will not get thru the second door. The cellar is nine feet deep. A deep cellar will not be changeable like a shallow one. It is 25 feet long and 9 feet wide, laid up with loose stone—something a mason would call a dry wall. Near the top I used mortar on account of frost. The wall is laid on a level with the ground. A plank, 2 by 8 inches, is laid for a sill; then the roof is put on; some boards are laid across the sills and filled with straw to the roof. The back end of the cellar is about two feet higher than the front. This conducts any water away from the sides. In carrying the bees, we walk on a level, set four in a row, and pile five high. About 200 will thus winter finely. We could put in 225. We started in with one ventilator on top of the first cellar. We now use two on top, about eight inches square. We lock up the door and do not see the cellar again until time to set the bees out in the spring. We built this cellar when we had a spare day. We first dug, then laid the wall, then put on the roof. Straw was to be had close by for the drawing. We bought lumber for the roof. We usually have paid \$10 a year

for cellars to winter in. The cellar's rent for two or three years paid the cost of building it. The additional labor necessary in putting the bees in and getting them out of a rented cellar will soon pay for building one—and then there is no worry, no insurance, and better wintering. We expect to build another one next summer.

Mayfield, N. Y.

G. W. Haines.

THE HONEY-RIPENING PROBLEM

Wherein Conditions Differ in a Hot Climate from Those in Temperate Regions

I have read on page 398, July Gleanings, the article on fermented honey. It is right, too. But honey is much earlier ripened in this hot climate than it is in a wet country. If the combs are half sealed in this country, my experience is that the honey is safe and will not ferment. But most beekeepers in the Gila Valley extract before there is an inch sealed along the top of the frame, or even less; yet I have not heard any complaints of their honey fermenting—probably because their honey has always been sold to the biscuit and cracker manufacturers, and has never been used for the table. Such honey will sugar hard in two or three months; but its grain is very much like coarse brown sugar, and all thru it is a thin watery substance. Put it on a wagon and haul it a few miles and it will begin to ooze out around the screw cap. Take off the cap and it will emit an odor. The mesquite and catclaw are much thicker and heavier than the alfalfa and other honeys. Mesquite weighs 12½ pounds, well ripened, to the gallon. Catclaw weighs 13 pounds to the gallon. Our other honeys weigh only about 12 pounds to the gallon. We all have to extract the mesquite and catclaw honey when it is so thick that you can hardly uncap it; and it is very hard to extract without breaking the combs out of the frames. When I was in the bee business in Safford, Ariz., I had a galvanized tank that held 1,800 gallons, and my honey was put in it direct from the extractor. This tank was put where the full rays of the hot sun could strike it all day; and the first 10 days after it was extracted there would be a white foam rise on the honey. Some times it would keep rising for 15 days. Just as soon as this impurity would stop rising I would draw it off into the five-gallon cans, and then it was ready to ship. If this tank was nearly full, I have known this foam to rise six inches on top of the honey, and the surface of the foam itself would become perfectly dry and free from stickiness. In this way my honey seemed to ripen in this hot country as nicely as the bees could ripen it.

Miami, Ariz.

W. D. Jefferson,

J. KETTLE says (Brit. B. J., 186): "I have lifted up the brood-chamber and outer case with a couple of sticks in some of mine, to see

if this adds to the stamina of the young bees to stand the long damp winter, and shall keep them up till robbery begins." It may be worth considering whether bees reared in abundance of pure air may not stand hard knocks better than those reared in somewhat stifled quarters. But that "till robbery begins" suggests that there is danger of robbery with so large an opening, and I am wondering whether the difference here is made by the bees or the locality. Most of my colonies have five openings, counting the entrance and the openings between extracting-supers, the total opening amounting to 48 square inches, or a third of a square foot, and I have no fear of robbing when the flow stops, provided everything is left just as it was during the flow. But if, when the flow stops, I make a fresh opening, robbers promptly note the change, and there is danger of trouble.

* * *

According to U. S. Bulletin No. 685, there are in the United States 6,000,000 colonies of bees, the total honey production being considerably in excess of 200,000,000 pounds. Figuring this at only 18 cents a pound makes \$36,000,000, a good bit more than the twenty millions we have been accustomed to estimate. Interesting to note in the same bulletin is that Florida is earliest of all the States in the matter of swarming, a third of its swarming being in March. Wyoming is the latest, 22.5 per cent of its swarming being in August. Taking the country at large, June is the great swarming month, 36.2 per cent of all swarming being then, with 3.5 per cent in March, 16.4 per cent in April, 25.1 per cent in May, 14.8 per cent in July, and 4 per cent in August. This bulletin, by S. A. Jones, shows that Uncle Sam is interested in doing something for beekeepers. It's a fine document.

* * *

C. A. Aeppler says in The Beekeepers' Item, "As far as I know, no one has proved that honey contains vitamins." I commend him to the tender mercies of Stanley Puerden. He further says: "I am convinced that it is not honey that contains vitamins, but pollen. The vitamins that are present in the larval foods of the bees are derived from pollen and not honey. Also, larval food contains large quantities of vitamins; so much so that when rats were fed upon a vitamine-free ration to which had been added 10 per cent of larval food, normal growth resulted, proving the presence of vitamins in larval food. But these

STRAY STRAWS

Dr. C. C. Miller

vitamines in the larval food did not come from honey, but from the pollen partaken of by the nurse bees. The value of pollen has always been underestimated

in the normal feeding of the larvæ, and only too often the failure of a colony to build up is due to a lack of pollen rather than a lack of honey."

The tribute to the value of pollen is well deserved, but it's a little beside the mark in the present case. If vitamins are not in honey, we should make no such claim. But what Mr. Aeppler says is not entirely convincing. He tells us why he believes vitamins are in larval food, but does not tell us why he believes them in pollen and not in honey. I confess to a mind prejudiced in favor of believing honey a vitamine-container, and as between the opinions of Stanley Puerden and Mr. Aeppler, until further proof is forthcoming, or until she recants, I prefer to pin my faith to the skirts of Mrs. Puerden.

* * *

We are told that it is better to breed from a queen whose royal progeny are uniform in character. I'm sure that's right. I would rather brood from a queen of that kind than to breed from one whose workers should store a good bit more honey but with royal progeny scattering all over creation in their characteristics. But while such a thing is all right in theory, putting in practice is not unattended with difficulties. In the first place, according to all I have heard and read, queens whose royal progeny are uniform are about as scarce as hen's teeth. The royal progeny must not only be uniform, but uniformly good, and not uniformly bad. In the second place, the necessary testing cannot be done in a day. Suppose you rear a queen in 1918. You cannot tell what she is as a honey-gatherer until she has been thru the whole of one season, and that will take you to the close of the season of 1919. That will be so late that you will hardly rear any queens from her before 1920. These can not be tested for uniformity before the close of the season in 1921, allowing you to begin using her as a breeder in 1922. In 1922 a queen born in 1918 will be somewhat "in the ser" and yellow leaf." It is possible that you might speed up that program, rearing your trial set of young queens after the close of the season in 1919, and then using your queen as a breeder after the close of the season of 1920. But I imagine you would find that not so very satisfactory. You must remember that this sort of testing involves the testing of an additional queen, if not several. For if you have no second choice, and are going to use that queen as

a breeder anyhow, what's the use of first putting her royal progeny thru their paces? Thirdly and finally, my brethren, how many of you are breeding from a queen whose royal progeny are as like as two peas in a pod?

* * *

H. D. Murry, in *The Beekeepers' Item*, reports a remarkable loss of queens in the spring of 1918. Natural stores were so scarce last fall that the bees had to depend almost or entirely upon sugar syrup, and conditions were such that he says, "I was continually feeding, all winter, every time there were a few days of warm weather. As soon as spring began I would notice that the queens were missing from a few colonies. They would just disappear, without the bees having made any preparations to supersede them . . . I noticed that the loss of queens was greatest where I had to feed the most sugar after spring opened. At one yard, five miles out in the country, there was an occasional light flow from various sources, and the loss at that yard was comparatively light. But, at one yard in town, I started into winter with 25 and lost 22 of them. Of the three that survived, one was an old breeder whose colony was not fed any sugar syrup, but wintered on honey; one quit laying for some weeks, but resumed business again after sweet clover began to yield; the other is still alive and doing well." The only explanation that occurs to Mr. Murry, he says, "is that sugar syrup does not contain the elements necessary to sustain life indefinitely, nor those necessary to growth of animal tissue. Since the queen is called upon to lay something like her own weight in eggs daily, those eggs must be supplied with the germs of life, and, as she could not get those elements from the syrup, she had to draw on her own resources for them, and it was more than she could stand for a limited time." Have the friends of sugar-feeding a better explanation?

* * *

A strong colony of strong bees is a requisite for best wintering, with abundant stores of good honey. If wintered outdoors, there should be protection against cold, and especially against the approach of strong winds. If in cellar, the temperature should be not far from 57 degrees, with chance for entrance of abundant fresh air, and hive-entrance wide open. Don't tinker with the brood-nest late in the season. Strong colonies mean all strong, any weaklings to be doubled up not later than September. Strong bees are those not worn out by field work, but reared late in the season. For bees of extra stamina, always breed from the best.

* * *

That new kink, page 460—let your combs stand four of five weeks after extracting, and then extract again. As intimated, that doesn't always work—the air may not be moist enough. Put the combs in a damp cellar, and a few days will be better than a

few weeks in a dry room. (It's a good plan, also to put wet cappings down cellar to drain.) But it should be remembered that even after that second extracting the combs are not really clean of honey, and it may be worth while to give them then to the bees to clean up, so that the small quantity left may not form granules to injure the honey put in them the next season.

* * *

Prof. J. H. Cook said years ago that the honey from milkweed overbalanced the harm done by the pollen appendages fastened to the bees' feet. Ye editor goes farther, and says, page 458, August *Gleanings*, that they "do little or no harm, as these appendages are pulled off by other bees." Maybe; but in this locality a well-appendaged bee is driven out by the other bees, and I never saw them pulling off the appendages.

* * *

H. H. Root, what you say at page 465, and the sight of the accompanying pictures, incline one to the opinion that it should be made a felony for any one either to buy or sell a 60-pound can without having it substantially jacketed. It's only one more of those cases that show it's often penny-wise and pound-foolish for a man to use something of his "own git-up" when he can get a standard article ready to his hand.

* * *

Belva M. Demuth, I'm your debtor. Not only for the good advice given on page 462, but for your approval of building air-castles. I've done lots of it, and am as much of an air-carpenter as ever. What fun it is! Even tho 99 out of every 100 come tumbling to the ground, the standing of that 100th castle pays for all the work done. The man who never dreams and plans is lacking in one of the elements of a true beekeeper.

* * *

Mr. Editor, I'm not anxious to mix into that quarrel between you and Dr. Phillips about feeding sugar to bees, page 461, but merely rise to remark that some day it may be discovered that sugar is an incomplete ration, and that bees fed on high-priced honey may have extra stamina enough so that the extra honey gathered by them will more than make up for the higher price of honey over sugar.

* * *

The *Beekeepers' Item* for June is an auto number—and a good one. But the discussion is one-sided, no one standing up for poor old Dobbin, who must stand aside for a "tin Lizzie" that has no fear of stings. Some prefer a truck car, some a car and trailer, but there is general agreement that a light machine for speed should be chosen rather than a heavy one for great weight.

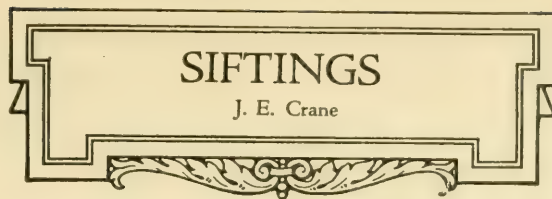
* * *

But aren't those California fellows just going to it in the way of organization? Maybe they'll shame some of the rest of us into it.

THOSE illustrations, page 466, Aug. Gleanings, are just great, "true to nature" as to the condition honey shipped some distance usually appears as it is unloaded from the cars. Even honey put up in cases as shown on page 467 I usually find more or less broken open and the cans loose in the car.

Says Belva M. Demuth, page 462, "The beekeeper's calendar should begin in August." That is as it should be, for, as she says further on, "At this time is laid the first course in the foundation for next year's honey crop, namely, the production of the bees that form the winter colony." And again she says, "Much of the so-called winter losses are not winter losses at all but August-September losses." These items are of special importance in those sections where there is little late summer forage for bees. Where such conditions exist, care should be taken that each hive at the close of the clover season should be left "rich in stores," which will compensate in a large measure for the lack of a continuous flow thru August in fitting the bees for winter. Where a colony does not get a laying queen until well into August, I have been in the habit of giving it two or three combs of brood from strong colonies that can spare them, so that it may have a sufficient number of young bees to form a cluster large enough to winter safely. Having laid the foundation for next year's crop of honey, let us proceed with the superstructure. Next in order will be to see that every colony is supplied with sufficient stores to carry it thru the winter. As some colonies consume much more than others, it is well to supply them with a liberal allowance. If a colony has somewhat more than it needs, it does no harm; but, if it has not enough, serious results are apt to follow.

Shall we winter in a cellar or out of doors? Well, that depends. If one has a deep dry cellar, I believe there is no better place for bees here in the North during the winter. The strongest colonies I found last spring in inspecting had been wintered in such a cellar, and, altho there were but six of them, they were in almost perfect condition. If colonies are to be wintered out of doors here in the North, much more care should be given to prepare them for the long cold months than when wintered in a cellar. First: all weak colonies should have their brood-chambers reduced to fit the size of the cluster. If very small, not more than three or four combs should be given, and the strongest reduced to not more than eight. I have wintered successfully out of doors on only three small frames about



three-fourths the size of a Langstroth frame. Then pack warm to the extent of two or three inches at the sides and six inches on top,

with planer shavings, dry sawdust, cork chips, or leaves—the more, the better. I use a three-fourths inch tube six or more inches from the bottom-board to make an upper entrance, so there may be no danger from suffocation if the lower entrance gets closed by ice or dead bees. This works well.

Shall we use sealed or porous covers over the brood-chamber? I have been a great stickler for a porous cover over the frames for winter, but last spring, when I began inspecting, I found the strongest colonies were wintered under an oilcloth cover. Could it be that I had been wrong in my conclusions all these years? But later I found quite as many dead colonies under sealed covers as live ones. How could the difference be accounted for? I finally came to the conclusion that a very strong colony under an oilcloth or sealed cover might winter well, or even better than under a porous cover, while a weaker one would perish. Just so a strong man may take a cold-water bath and be the stronger for it, while a feeble person would be almost sure to receive harm. However, but little upward ventilation is required with the average colony. Two boards with a crack between laid over the brood-chamber seems to answer every purpose; or if in one piece, a three or four-inch hole should be bored thru it and covered with wire cloth, or old cloths half covered with propolis. Of course there should be a sufficient amount of packing above.

I have noticed in visiting different yards that bees winter better in old box hives than in frame hives, and better where the combs are irregularly shaped than where they are straight. Six or seven Langstroth frames set on end would make an ideal shape and size for a moderate-sized colony; but when we depart from this we must make up for it in extra care and packing, if we expect to winter our bees successfully here in the North.

I was glad to see Mr. Holtermann's explanation of his method of making swarms late in the season, as some young beekeepers might otherwise have been misled by his previous statements on page 468. There is little difficulty in dividing a strong colony after the close of the clover harvest, if you have a young queen and combs and can feed sugar enough to carry them over till the next season.

FOR a year and a half I have been writing for Our Food Page and have never before mentioned dining-rooms. However, it was not for lack of convictions on the subject, for I firmly believe the best of food is not going to fulfill its mission unless eaten amid pleasant surroundings, and, I might add, in pleasant society.

Let me describe my ideal summer dining-room. In the first place it has no telephone. Telephones are sometimes exasperating conveniences. Also there is no mahogany furniture to dust, no rugs to clean, no windows, mirrors, nor lights to wash. But you never saw a more beautiful dining-room. Underneath the foot there is yielding green turf, overhead are blue sky and soft, fleecy clouds, constantly varying in tint and formation. Tall trees give shade and coolness, the air is the purest, and in every direction is beauty of landscape, rolling hills, a brook, rocky banks, rich farm lands, all so quiet, so peaceful that one can almost forget that a cruel war is raging in the same world.

No jazz band ever deafened unfortunate victims in that dining-room, but we have wonderful music, sweet bird voices accompanied by the soft ripple, ripple of the near-by brook as it slips over its rocky course, and sometimes one catches the mel-low tinkle of a distant cowbell.

If the dining-room is somewhat lacking in conventional furniture, it by no means lacks conveniences. There is a gracefully curv-

OUR FOOD PAGE

Stancy Puerden



slabs of sandstone which are useful for various purposes. Broad pieces of it under the tablecloth make a firm foundation for certain tall dishes. Other slabs may be built into a hearth for a fire, if we happen to plan a corn roast or to fry potatoes or eggs.

There are shrubs in plenty of a height to make convenient hat and coat racks, and, if you love to lie flat on your back and watch the clouds, there are places where the ground curves gently to make a most delightful couch. The small children are much more willing to wash their fingers in the brook than in the prettiest cutglass finger bowl, and they are not only willing, but anxious to risk a sudden and unexpected bath by paddling barefoot on the slippery bottom of the brook.

In the Puerden family picnics are general very simple, impromptu affairs. Sometimes "the tired business man" telephones home an hour or so before the evening meal, suggesting that we make it a picnic. Sometimes the inspiration comes from another member of the family. Quite often another family or two accompany us, but we can have a blissful time by ourselves, if no one else happens to be in a picky mood. We have even taken our breakfast out picnic fashion.

Almost any sort of a meal can be adapted

ing old log which does duty as a seat or side-board, according to the mood of the diners. In the bed of the brook and for a wide space each side of it are flat



Here's the ideal summer dining-room and some diners.

to outdoor eating. For instance, omelet, creamed potatoes, bread and butter, cake and fruit can be changed to hard-boiled eggs, potato salad, and sandwiches, plain or otherwise, and, if the fruit happens to be stewed, it can be carried in a fruit jar. On cool nights, such as we have in September, it is fun to build a fire and scramble or fry the eggs out of doors. As a matter of fact, food tastes so much better in the open air that quantity is more important than quality.

There is one point on which we are very particular, and that is not to let any member of the picnic party drink any water of doubtful purity. We usually take from home everything we drink. Plenty of milk and water (not mixed) are indispensable for the children, and hot coffee or cold tea is much appreciated by the grownups. Before we had thermos bottles I used to scald a gallon jug, pour boiling hot coffee into it, wrap it tightly in newspapers, and succeed in keeping it hot several hours; and even yet, when the number of coffee drinkers is large I resort to the jug. Water may be kept cold in a jug in the same way. A half-pint can of condensed milk makes a good cream substitute for the coffee.

There is one drink which seldom appears at a Puerden picnic, and that is lemonade. Perhaps I should not neglect to state that there are a number of other beverages, somewhat stronger, which never appear at our picnics, and I am rejoicing because they will probably soon be a matter of ancient history to all Americans. Now lemonade has a good reputation, but if ever a picnic meal is followed by disagreeable consequences to our children it is when it has been accompanied by cold lemonade. I believe a hearty cold meal, with cold lemonade as the only beverage, is a sure and speedy indigestion-promoter.

In order to lessen the work of preparation for picnics I have a simple picnic outfit which is always in readiness, and the eats taste quite as good as if served from a \$50.00 automobile hamper. Our picnic basket cost 75 cents, a large tin sandwich box was 60 cents, aluminum cups with handles, which will nest together in a comparatively small space, were 10 cents each. Tin forks and spoons are a comfort, as one need not worry about losing them. Paper napkins, paper plates, paper towelling, and oiled paper save work, and paper tablecloths may be bought for a trifle. Two quart size thermos bottles are the only expensive part of our picnic equipment.

Sometimes one hears the remark "picnics are always wasteful." It is due to poor management if they are. Picnic leftovers may be utilized just as successfully as those from the home table. It is wise not to have very many sandwiches with fancy fillings. The plain ones may have a short session in a hot oven the next morning and appear on the breakfast table as toast. Take care that

all left-over food is kept clean and pack it carefully for the return trip.

Altho we have enjoyed many suppers in our ideal dining-room the past summer, curs only as we appropriate it for the occasion, we have been careful to use no more wheat than we would at home. Steamed cornbread sandwiches help fill the sandwich box, and wheatless cakes, sweetened with honey, save both sugar and wheat.

Never start on a picnic without honey. Even if you do not eat it yourselves, it may help to sweeten existence. There are farmers who do not care to have their pasture lots converted into outdoor dining-rooms. No doubt they have been justly annoyed by careless picnickers who have failed to leave the beautiful dining-room tidy, or who have left the bars down. It is far easier to prevent wrath with a gift of honey than to attempt to "turn it away with a soft answer."

As to the picture, or what is left of it after the editor and his little scissors were thru, it is not a widower and his five children displaying cheerful resignation. The wife of the man hiding behind the big cup is at the other end of the camera, bidding the rest to look pleasant.

Honey for Canning and Preserving.

Now that we are all buying sugar by the card and are limited to two pounds per person a month, canning and preserving with honey assumes a new interest, even at the present high prices. In the recipes below sugar may be substituted for half the honey, if preferred.

As a family we Puerdens have been accustomed to the use of a variety of marmalades and preserves, as we prefer most of our sweets in that form, or as honey, to sweet pastries. Also, as we never care for sweet in coffee or tea or on breakfast cereals, we perhaps crave more of what the Hoosiers call "spreads." But, in spite of that fact, I shall never again "do up" quantities of marmalades and jellies in the hot summer months when there is so much vegetable and fruit canning to be done. It is better to go without them than to be "done up" yourself. However, it is unnecessary to go without. Enough for present use may be made every month in the year, even during the cold weather when there is little fresh fruit. They may be made from canned fruits and even dried fruits, and orange marmalade is easily and quickly made at any season. Freshly made preserves always have a finer flavor, even if made from canned fruits, and many housekeepers prefer to can their fruit juices and make it up into jelly, as needed. If all housekeepers followed this plan, the demand for sugar would be much more evenly distributed thruout the year.

YELLOW TOMATO PRESERVES.

- 1 lb. yellow cherry to ½ lemon sliced thin
 tomatoes cloves, stick cinnamon
 ½ lb. honey or ginger to taste

Wash the tomatoes, but do not peel.

(Continued on Advertising Pages)

SIDE liners who happen not to live in Dixie may well skip this Department this month — there are compensations, it seems, for living north of the Line! This is all about wintering—wintering in the South. Yet, after all, what can I say particularly different from what I have said before? And that, summarizing, is about this.

Bees Wintered Outdoors Without Packing.

There are in this section of the middle South many successful beekeepers, honey-producers, and queen-rearers both, some of them having been in this work for more than a score of years. And these men, almost without exception, leave their bees thruout the winter on their summer stands, in single-walled hives, with no packing of any sort—either around, below, or above. Most of them contract entrances. And they do, most of them, lose some colonies every winter. And those that they do not lose come thru with varying degrees of strength—varying from hive to hive—varying from beekeeper to beekeeper. And many of them, inertia being one of the common human qualities, say, "We prefer to do it this way—we are used to it—this is good enough." And others, more progressive, have made one time or another, one way or another, some slight attempts to pack their bees for winter, and have discontinued the practice, saying, "It does not pay in the only way that can justify it—in dollars and cents." And still others have said, "We lose practically no colonies; and our bees come out so strong in the spring that any increase of early strength would embarrass us with swarming tendencies before the honey flow."

Government Experts Favor Packing.

Meantime, up in Washington, there are earnest, scientific men giving their entire time and their trained faculties to a betterment of this industry, and they have made careful painstaking experiments that have convinced them of the value of packed hives in any locality where the temperature may often drop to freezing. That, of course, includes Tennessee. So there we are—right there. Shall we pack, or shall we not? Personally I have times of regretting not being able to line up energetically behind either one side or the other of this question—for so **somebody** would have approved of me! As it is, the earnest desire to be open-minded to the intelligent claims of both sides has of course resulted in criticism from both. Yet, after all, this is quite unimportant. What is important is the right answer to the question: Will it pay, in dollars and cents, to provide packed winter cases for bees in, say, Tennessee and North Carolina? While this matter has grown

Beekkeeping as a Side Line

Grace Allen

almost to the proportions of a controversy, of course it is not of a personal nature, but one of the controversies that, in almost any field of endeavor, must

necessarily attend either the establishment of modern progressive practices or the defense of old dependable ones against mere novelties and innovations.

Abundant Stores and Young Queens and Young Bees Considered Sufficient by Some.

If I have referred often to the decisive opinions, based on the results of experience, of J. M. Buchanan of Franklin, Tenn., and L. E. Webb of Morgantown, N. C., it is because I am impressed with the reasonableness of them and others like them. More than once I have quoted their statements and it may seem unnecessary to do so again, yet, as this is an endeavor once more to review the whole situation to date, there may be some justification to do so. Mr. Buchanan is an enthusiastic advocate of wintering in two stories, with a wealth of stores. "I pack my bees," he has often remarked, "only on the inside, with solid slabs of honey." During locust bloom, usually late April, he customarily finds 15 to 18 combs of brood, and would only have to contend with an early swarming tendency, if colonies were stronger. Mr. Webb also advocates extra room, using himself either Jumbo hives or a story-and-a-half standard brood-chamber thruout the year. He, too, insists on unstinted stores, and with good hives, young queens and young bees, he defies the winter weather—successfully. Then there is W. E. Lee of White's Creek, Tenn. His colonies also are of the big, vigorous spring type that is in danger of being crowded out of all bounds in April. (I might remark in passing that I am not in that class myself. In late April, we seldom have more than seven or eight combs of brood per hive, with many colonies having less.)

Winter Losses Common.

On the other hand, opposed to these records, we do have in this section, repeatedly, heavy winter losses. And we are only too often judged thereby. But we have, too, many careless beekeepers, unread men of the mountains or uninformed backwoods farmers. And it is a question if it is so much winter packing that they need as ordinarily good beekeeping practices, with particular care on the points stressed by these men just referred to—plenty of room, plenty of young bees in that room, plenty of stores for the young bees, and a vigorous young queen presiding over the destinies of the colony.

Now it may be that these cases where the bees come out so especially strong are

the results of particularly favorable conditions that do not prevail widely, or a particularly high degree of skill, or a happy combination of the two; perhaps for the great majority of Southern beekeepers winter packing would bring about such results, where nothing else would. Unless a beekeeper is sure—soundly and intelligently sure—that he does not desire colonies any stronger in spring, has no out-and-out winter losses worth changing his methods for, and either does not think he could be any more successful, or does not care to be—the correctly progressive thing for him to do is to give this winter packing a trial, as thoroughgoing a trial as he feels able to give it. The cases are a bit expensive, and that is unfortunate at this time when everything else is expensive. Yet if they pay, they pay, expense and all.

In the winter of 1917-18 the losses thruout the South were startlingly heavy, even among the best beekeepers—(tho I must except L. E. Webb, with his 100 per cent perfect wintering). It seems as tho these losses might convince the losers of the necessity of winter protection. Yet most of them reply, "It is honestly cheaper to stand such a loss once in 20 years—for this winter was almost unprecedented—than to equip the whole yard with packing cases, and then pack and unpack every fall and spring; and a whole lot easier!"

A Probable Solution.

It may be that the solution of these two almost unreconcilable systems may lie in moderate protection, without full packing,—heavy paper wrappings or shallow supers filled with dry leaves or other material. I, for one, have been encouraged thru the results of a limited experiment to try still further the principle of absorbent covers, placing burlap instead of a sealed cover between the bees and a super of packing. In a rather generous collection of letters that have reached me on the subject of wintering, there is one from A. B. Anthony of Sterling, Ill. And Mr. Anthony advises thus: Put an extra $\frac{7}{8}$ -inch wall, painted white, over the bees, without packing, and contract entrances; let the space between this extra box and the hive be $\frac{3}{8}$ of an inch—protection without packing. Some such middle course may be best here.

Last fall I put four colonies, two hive bodies each, in a quadruple packing case that cost nearly \$8.00, and the results were not encouraging. Yet as one swallow does not make a summer, so one packing case does not settle the problem of wintering bees in the South. From what the federal experts in the South had predicted, I had hoped great things from this packing. The fact that the great hopes did not materialize had to be admitted honestly, yet none but a shallow mind would expect this to settle things. I have searched in vain for any reason this case should have failed so signally in producing the results claimed by its advocates. But now Dr. Phillips has most

kindly come to my assistance with a friendly letter, in which he suggests that the weakness may lie in the entrances. These four entrances, two to the west, two to the east, were contracted, as were all in the yard, with the regular contractors that come with the hives—no more. Here let me quote from Dr. Phillips' letter:

"In Washington, the bees have for ventilation, in the dead of winter, a $\frac{1}{2}$ -inch auger hole, and perhaps you will think this is entirely too small; but I suggest that you give it a trial, and, if your results are anything like ours, I am sure you will have larger colonies than you have ever seen before in all your beekeeping experience. During the fall and spring we give the bees four such auger holes for flight, but during the colder weather three of these are covered with a piece of section material. Of course it would be absolutely fatal to a colony to reduce the entrance in this way unless the bottom is packed, because the dead bees would accumulate on the bottom-board at the entrance and close the opening, causing suffocation. There is one test you can always apply to your bees to see whether they are sufficiently packed. If they are able to carry out the dead bees during the coldest weather which you have in the winter, and dump these bees on the ground outside the hive, you may be certain that your bees are warm enough. Unless they are able to do this, and if dead bees accumulate in the bottom, you may be quite certain that it is too cold for them to do housecleaning as they should do, and therefore they are insufficiently packed."

Kennith Hawkins has told me about the Washington bees sauntering out the front door in midwinter and dropping their dead out in the weather, and I watched in vain to see mine act that way. They never did. Slowly thru the winter the piles of dead grew before the doors of this winter case, but they seemed to be deposited, as with unpacked colonies, only on flight days. Tho it was surely true that the packed bees did not fly out so often as those not packed, nor did they have so many dead before their entrances.

What Mrs. Allen Will Do This Fall.

Acting then on Dr. Phillips' suggestion, I shall try these very much contracted entrances this next fall. And I shall again put shallow supers of leaves (over burlap) on other colonies, with no other packing. And probably I shall try Mr. Anthony's plan of the double wall with air space between. Still other hives shall remain with nothing different from summer conditions except the contracted entrance. Of course, much of this we tried last winter, with neither the quadruple case nor the colonies with supers of leaves above showing any especial advantage, except that those with absorbent covers had no moldy combs, while most of the others did. But in a matter of this kind only a more extended experiment will ever justify a final conviction.



FROM NORTH, EAST, WEST AND SOUTH



In Northern California—A month ago we reported our crop prospects as favorable. The season opened several weeks earlier and indications were that we would get a normal crop. During the past month alfalfa has bloomed profusely, yet as far south as Kern County and as far north as Butte County reports continually come in that the honey flow is very disappointing. Some isolated sections report a fair flow, but the majority of reports indicate very poor yields. This is especially true in the southern portion of our valley. The prospects for a fall flow are likewise disappointing as the condition of fall plants is much below normal. As yet there is no indication of a honeydew flow along the rivers. Ordinarily "river honey" should have put in its appearance at this writing (Aug. 5). As it appears to the beekeeper the weather conditions were not unfavorable for a good flow of honey from alfalfa. The absence of a good flow has caused no little astonishment among our best beekeepers. Undoubtedly there are some climatic factors, which either control or have a very great influence on the secretion of nectar in plants. What these conditions are we do not know, and, even should we know, we would be powerless to have any control over them.

It is now a month or more before most of us will give much thought to the problem of wintering, yet a few lines on this subject will not be out of place. Colonies at this time which have yielded 50 per cent or less of the average yield per colony in an apiary by all means should be requeened as soon as possible. At this time queens are easily secured and readily introduced. In this manner weak colonies may be built up with a sufficient number of young bees to pass the winter. The experienced beekeeper knows well the value of a colony the following spring when it received a young queen the autumn before. The advantages gained in requeening are twofold. In the first place colonies that are producing little or nothing now are almost always the ones that are lost during winter. Barring disease the fault lies invariably with the queen. She is failing and should be replaced. In the second place, a weakling requeened at this time is not a source of trouble the following spring, as is usually the case when a colony is allowed to retain its old queen. It has proven disastrous to let such colonies supersede their queens. Next to the importance of good queens comes the question of the amount of stores necessary for wintering purposes. The amount necessary is, to a large extent, dependent upon location. Beekeepers situated along rivers are able to winter successfully colonies in single stories that contain no more than five frames filled with honey. In the

foothill districts a little more honey is required for successful wintering; and, on the plains, especially when there is considerable alfalfa and little or no deciduous fruits, it is wise to retain at least six full frames of honey in the super. It is of the utmost importance for each beekeeper to study very carefully his locations, as no two locations are alike and it is impossible to set forth any definite information regarding the amount of honey necessary for wintering in a given location. Beekeepers that have studied this problem know that the amount of honey necessary varies greatly from year to year, and that it is always wise to leave with the bees the maximum amount of honey that they required during any unfavorable winter or spring. Such an eventuality may arise any year, and this is a very wise precaution to follow. The writer winters his bees with all their surplus comb. About 10 per cent of the colonies have two extracting supers and the balance only one. Queen-excluders are left on the entire year, and the queen and her brood always remain in the brood-chamber. In this manner, the bees have properly arranged their nest for the winter, and the brood combs are kept in good condition. After the last extracting it is necessary to see that each colony is queenright, and that the brood is well surrounded with honey. All covers should be fastened down tight either by means of two nails, one on each side, or weighted down by rocks or the like. Entrances should be contracted to about the space of one inch until bees commence active breeding the following spring. This is best done by means of a cleat. Entrances are contracted for the purpose of conserving the warmth within the colony, and as an aid in enabling the bees to better protect themselves against their enemies, such as robber bees and wasps.

M. C. Richter.

Modesto, Calif.

* * *

In Southern California—Some people — and some who are beekeepers, too—think we have no wintering problem in California; but I believe in many cases the crop will be harvested in proportion to the care and skill exercised in wintering bees. September, a month in which bees of some localities are still gathering honey, is none too early to begin to prepare for winter. For years I practiced wintering with the supers on the hives. This was done for two reasons: first, the bees can take better care of the extract combs than I can, for the wax moth is an constant handicap to storing empty combs, unless one has a sulphur house or is otherwise prepared to care for them; secondly, a colony run without excluders, for extract honey, is not likely



FROM NORTH, EAST, WEST AND SOUTH



to have sufficient stores below to winter on and come out in the spring strong and ready for the honey flow. Now, to obviate this trouble, I have for several years practiced using excluders and prefer to use them after the main honey flow is over and the probability of swarming is past. Then the colony will fill the lower story full and leave the bees in much the same condition for winter as when run for comb honey.

If the supers contain honey sufficient for extracting, take off part of it, leaving two or three full frames in each super. As the cool weather gradually comes on, take off the supers and at the same time carefully examine each colony to be sure that it has plenty of honey below and a good queen. Perhaps you will find a few where an exchange of a heavy frame of honey for a light one will be beneficial. Leave combs with pollen next to the combs containing brood. Perhaps in six or eight supers you will find enough combs with honey in them to fill one super. Place this on a strong colony over an excluder. As some colonies will consume more than others, the combs of honey will come in handy to help out during the winter and early spring months.

The dry combs that have been taken off should be thoroly cleaned by scraping all top, end, and bottom bars. Most of the moth eggs are laid on the top and bottom bars. Those combs containing any pollen should be looked after very carefully as they are a paradise for wax worms. Combs well cleaned, placed seven in a 10-frame super and stacked in a dry, open shed, where there is plenty of light and where no mice can get at them, usually come thru the winter in good condition.

Begin this month to prepare for winter by requeening all colonies that have old queens or have not given satisfactory yields of honey. It is not always the most populous colonies that store the most honey. Some of the largest ones seem to consume a good part of the honey they gather. Others that do not appear to be so strong are better honey gatherers and always give good results in surplus.

Be sure that all covers are rainproof. If you use cloths under the covers, it will be well to place a weight of some kind on each, sufficient to keep them from blowing off. Most parts of this country have occasional high winds during the fall and winter months.

See that all hives slope to the front from one to two and one-half inches. All bits of wax, etc., will then be carried out instead of accumulating in the back of the hive; the rainwater will also run away rather than into the hive.

It is well to place the hives on some kind of a stand to keep them off the ground during the winter. Anything one inch or

more in thickness will do. I have tried to observe if there is any difference between those colonies wintered with the hives sitting directly on the ground and those on one-inch stands; but have seen none. However, it is a great saving of hive bottoms when some kind of stand is used. Many times squirrels and gophers will throw earth against the hives, and, if these remain damp, the wood will decay and the combs may mould. A free circulation of air under the hive seems to soon dry this earth and prevents bad results.

Wintering in southern California may be in many ways preparing for the next year's honey crop. Very little, if any, brood is in the hive during a period of about a month in November and December. By January, in many localities, colonies will begin to build up and will soon have from one to four frames of brood. It is not long until they may be quite populous. Some winters—like our last one—bees will gather considerable nectar almost every month. If the colonies have become strong early in the season, that is when our wintering problem may cost us the lives of these same colonies. Should a long cold spell come on, being sure that the bees have plenty of food is the necessary item to save them. This is the time a 10-pound frame of honey is worth—well, what is the life of a good colony of bees worth next season?

* * *

The honey market remains active and buyers are taking all offerings at from 20 to 22 cents a pound for extract. From \$5 to \$6 per case is being asked for what little comb honey has been produced. While the crop has been less than 50 per cent of normal in many cases, yet about 100 tons of extract honey have been shipped from Corona this season. This comes from a source that would be entirely lost were it not for the little busy bee and will do considerable to help feed the boys "over there" and help to swat the Kaiser.

* * *

Very few apiaries are being offered for sale and most beekeepers feel that, in their bees, they have one of the best investments they can make.

L. L. Andrews.

Corona, Calif.

* * *

In Minnesota—"How is the honey crop?" "What is honey selling for?" These and similar questions are being asked here daily by beekeepers and by others as well. The interest shown by the general public in the honey industry is no doubt due in large measure to the prominence given to honey as an important article of food by the U. S. Food Administration. To put an estimate on the Minnesota honey crop for this year is not



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an easy thing to do because of the varying weather conditions. There have been partial drouths in some localities, while only a few miles distant there has been an abundance of rain. In many sections the white clover was a total failure. Basswood yielded fairly well in some places, while in other places the blossoms yielded no nectar. From the present outlook I would place the crop at about 60 per cent of normal. Prospects for a fall flow are excellent. Several beekeepers who sell direct to consumers are asking 20 to 22 cents in 10-lb. pails. [They are not asking enough.—Editor.]

Many beekeepers in Minnesota continue to keep black or hybrid bees, and as a consequence we find European foul brood appearing in new localities each year. For this reason I was especially pleased to receive a few days ago a copy of the new Farmer's Bulletin 975, "The Control of European Foul Brood," by Dr. E. F. Phillips. The bulletin is very helpful, going thoroly into the subject, and it is a fine illustration of how the trained bacteriologist and the expert beekeeper can work together, each supplementing the work of the other. Every beekeeper should procure a copy of this bulletin and study it.

I have just returned from a meeting of the Hennepin County beekeepers, and they unanimously passed a resolution advising that beekeepers ask not less than 25 cents for honey in 60-lb. cans and 30 cents in smaller packages. These prices are gross in both cases.

Minneapolis, Minn. Chas. D. Blaker.

* * *

In Iowa—It is time for beekeepers in this latitude to begin seeing that each colony is well supplied with stores and otherwise in first-class condition for winter. There really is only one safe way to winter bees in Iowa, without a great amount of work and expense, and that way is in the cellar. Each colony must be strong and healthy, with a surplus of 25 or 30 pounds of good stores. The cellar must be dry and clean, easily ventilated, and absolutely dark. The temperature must be from 45 to 53 degrees F. Do not wait until severe weather has arrived before putting them in the cellar. About the last week in November is as late as it is safe for them to be outside. With the above conditions complied with, you will not need to take them out until the middle of April, thus avoiding that bugaboo of spring dwindling. Leave the $\frac{7}{8}$ -inch opening with no screen over it. The small beekeeper cannot afford to take the chance of losing a large per cent, or all of his colonies, because he of all others is best prepared to find room for his bees in his cellar. The very worst place to winter bees is in a barn, or side shed. It is almost sure death to the

colony, even when in good condition at the beginning of winter. If you must winter outside, follow directions given in A B C and X Y Z of Bee Culture. Never mind the cost, for the bees will make proper returns for the extra investment. I hope I have made it plain to winter your bees in the cellar. During seven years of wintering in my cellar, I lost no colonies until last winter—and then only two. They were not in good condition when put in, and I expected to lose more. I had 28 colonies piled up in four rows, with the backs of the hives elevated about $1\frac{1}{2}$ inches, so the bees could drag out the dead ones; and some of the hives kept their bottom-boards clean.

The Polk County Beekeepers' Association held their annual meeting in Greenwood Park, Des Moines, the afternoon of August 7. "Fall Management of Bees," by State Apiarist F. Eric Millen, and "Diseases of Bees," by Assistant State Entomologist Wallace Parks, were the principal addresses. Polk County Agricultural Agent Carl Kennedy and Dr. A. F. Bonney of Buck Grove also addressed the meeting.

The annual report of the State Apiarist is out. If you have not received a copy, write Prof. F. Eric Millen, Ames.

The membership of the Iowa Beekeepers' Association is increasing rapidly from the new memberships sent in by the new county associations that are being organized.

Iowa is having a poor honey crop this year. There are some spots where white honey was produced. It is worth 25 cents per pound to the jobber. The burning, hot winds and weather the first week in August are injuring the chances for a fall flow also.

Marshalltown, Ia. Hamlin B. Miller.

* * *

In Michigan—Because of the congested condition of Battle Creek hotels, due to the proximity of Camp Custer, the place for holding the next annual meeting of the State Beekeepers' Association has been changed to Lansing. It also develops that during the first half of December there will be a large number of conventions such as the Grange, horticultural societies, etc., and therefore, the date has been changed to Nov. 19, 20, and 21.

In Michigan and everywhere, when feeding is to be done, good heavy syrup made from granulated sugar should be fed plentifully. It is an unjustified waste to feed a colony enough to carry it thru the winter, but not enough to prevent starvation in the end. The equivalent of six frames of sealed stores should be in the colony at the beginning of cold weather.

Let me say to our Michigan beekeepers, looking forward to winter, that a very large number of what were fair colonies in the fall either die out or become so weak as to be useless because of the loss of the queen



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before spring. All queens that are not known to be first class should be superseded at once. When colonies are requened late in the summer, brood-rearing will continue much later than in those colonies in which there is an old queen. This condition is very desirable, inasmuch as it insures a large number of young workers to carry the colony over until spring. Every queen that is not up to standard should be superseded now.

From the best information available, it seems that there is likely to be a local sugar shortage this fall, similar to the one experienced last fall. With this in mind, every beekeeper should preserve combs of sealed honey for feeding. If it is possible to secure sugar later on, then the honey can be extracted and sold. Any beekeeper who has had disease to contend with, or whose honey crop has been cut short by the drouth, should send in at once for a sugar affidavit, in order that a permit to buy may be secured as soon as possible. There is a great deal of delay at present in securing these permits, as the Food Administration is receiving daily from 2,500 to 4,000 letters. Many beekeepers produce honey in shallow extracting supers. If such supers filled with honey are reserved for feeding, there is no more profitable use to which that honey can be put. Nearly everyone agrees that sealed honey is much preferable for feeding to sugar syrup, provided, of course, that the honey was produced by a colony free from disease. The story-and-a-half hive is also more conducive to good wintering than the one-story hive, because it allows a colony to cluster a considerable distance above the entrance. The place between the brood frames and the shallow extracting-frames also makes an ideal path for the bees to travel from one comb to another. Last winter the college bees were wintered in two-story hives, with the upper story filled with sealed honey. These colonies were wintered in packing cases, and most of them had only one-half inch auger holes for entrances. Every colony wintered exceptionally well, excepting one that lost its queen.

The matter of good packing cases was mentioned last month, but I wish to again emphasize the necessity of Michigan beekeepers making preparation for winter now. When honey was very cheap and food was not particularly in demand, one could possibly be excused for not giving the best of care in wintering. With honey at the present price and with such an incessant demand for sweets, it seems that the giving of proper protection to the bees is one of the ways in which every beekeeper can demonstrate his loyalty and patriotism. The matter of protecting bees in winter has gone beyond the experimental stage. It is

definitely known that a colony must be well protected in order to be in the proper condition for gathering the maximum crop the next season. Packing cases can be made from very cheap and otherwise useless lumber. As one honey buyer said recently: "At the price of honey today, the beekeepers are getting as much money for one crop as they used to get for three, and it is nothing more or less than good business to give the bees more protection than they used to have."

A joint meeting of the Branch County Beekeepers' Association and the Steuben County, Ind., Association was held at the apiary of H. W. Barnes of Orland, Ind. Frank Wallace, State Entomologist of Indiana, Mr. Yost of the same office, and the State Inspector of Michigan were present and addressed about 40 beekeepers. Mr. Yost demonstrated American foul brood. This is the beginning of what is expected to be a very close co-operation between the apiary inspectors' offices of Indiana and Michigan, with the end in view that a closer relationship between the beekeepers on both sides of the line may be established, and foul brood thus more effectively controlled.

East Lansing, Mich.

B. F. Kindig.

* * *

In Ontario—At this date (Aug. 5) it is possible to have a better idea as to what the crop of white honey is like here in Ontario, as we have had reports from many parts of the Province. Reports are extremely variable, for while many sections have a very light crop, others not far from these places have a fair yield. White-clover localities have done better than usual, especially in places where late rains came and freshened up the clover, thus prolonging the season while other sections were all dried up. My own largest yield has been in a locality where little, if any, alsike is grown. So for the first time in my beekeeping experience I have to report white clover beating out the alsike for honey-yielding. But taking one year with another, alsike is beyond question the main honey source for Ontario, and without it many beekeepers would soon go out of business. While the crop will average larger than last season, on the other hand bees in the Province are much reduced from last year, so it is a question if there is much more honey available than last year. Prices are firm, and at this date it looks like 25 cents wholesale for No. 1 honey. In fact, I know of sales having been made at that figure; but, on the other hand, some have sold at much lower prices.

Basswood seems to have been a total failure, and, unless we get rain soon, buckwheat will not be a big yielder either in honey or grain, as it is in bloom and only a few



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inches high in many cases. But buckwheat is wonderfully recuperative, and with seasonable showers it might still surprise us.

The month of September makes us think of winter preparation again, and the first thing to consider is the question of having a good queen in each colony. Systematic requeening is fine in theory and equally as good in practice, providing one can get time and proper weather conditions to attend to the matter in due season. While systematic requeening is quite possible when one has a limited number of bees, I must confess that I find it impossible to do as much requeening as I would like to do each year, and consequently pay the price by having queenless colonies all too frequently, and also having queens play out at a time of the year when a poor queen is fatal to a colony so far as honey surplus is concerned. But replace all poor queens that you can possibly attend to, and do not put off uniting weak colonies or otherwise building up stocks too weak to winter, till the season is too late to do the work properly. See that all colonies have enough good stores, and, if you have no buckwheat in your locality or other fall sources of honey, it is quite possible (and I believe profitable) to have the bees ready for winter by Oct. 1. Personally, I like to have all fed up no later than Oct. 10, and, if done earlier, I would not worry. Speaking of feeding the bees, reminds me that for the present at least the Food Controller has ruled that we can have no sugar for feeding. While I believe drastic rules should be enforced to see that no beekeeper abuses the privilege of using sugar, yet it is to be hoped that some modification of the order will yet be issued, else much hardship will result in many instances. This will be the case where the honey crop has been a failure as well as in apiaries where there is a sprinkling of foul brood, thus making it very dangerous to feed honey. I am confident that with proper representation to the proper authorities, this matter will yet be adjusted so that these difficulties may in a measure be overcome. Having provided the bees with good stores, then see that all are either well packed in outside cases or else put in a good repository. Bees will be worth money next spring whether the war is over or not; so let us try and see that we do our part in trying to winter them successfully. J. L. Byer.

Markham, Ont.

In Texas—At this time, with the extreme heat and drouth, it is rather difficult to look ahead to contemplate winter preparations. However, this year of all years every beekeeper should carefully consider the matter of carrying his bees successfully thru the coming winter. The losses of the past two winters must not be added

to. Now is a time to make every effort to save every colony possible for honey production next year to help solve the food problem. In many sections of the State the colonies are weak, and wherever such conditions do exist uniting should be done. The sooner this is done, the better. A good strong colony is always better able to take care of itself than is a weak colony. The next matter of prime importance is to see that every strong colony has a strong, young vigorous queen. More and more beekeepers are coming to realize the importance of the colony going into the winter with an abundance of young bees. Requeening should go hand in hand with uniting, as the first steps in the preparation for winter. Introduce the young queen early enough that she can provide for the young bees—do not wait until late fall. Beekeepers now are wanting more from their queens than ever before, so that two years is as long as a queen can properly meet the demand. The feeling is gradually being overcome that black blood is necessary in a colony of bees for the best honey-gathering. There are plenty of strains of Italian queens that produce most excellent honey-gatherers, and are far more pleasant to work with. Among the more progressive beekeepers natural requeening is not allowed any more. Close attention is given to every queen, and a high standard must be maintained, if she is retained.

Assist the bees in every way possible to gather ample stores. The two suggestions given above will aid greatly in this endeavor. The beekeeper should not be over-anxious to sell a large amount of honey this year. Leave ample for the bees to winter on. Do not extract a single drop of honey from the brood-chamber. Many of the more successful beekeepers are following the plan of Dr. Miller in storing some extra honey in brood-frames for possible feeding in the spring. The beekeepers have made the Food Administration realize the necessity of saving all the bees possible, so they should not forget to try to save bees without the help of sugar. The question of the relative merits of honey and sugar for feeding has been much discussed of late, especially in the Beekeepers' Item for Texas conditions. The fact can hardly be denied that honey is the natural food for the bee, and consequently is the better. Of course, the situation can be saved by sugar-feeding, but it should not be made an easy means of solving the problem. The proper attitude has been taken by the Food Administration in not wanting to supply sugar in unlimited quantities to beekeepers who have extracted too closely for the normal needs of the colony to winter on. Money looks good this year, especially considering the short crop of last year; but it is not right to sell



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honey at 25 cents and hope to get the bees thru on sugar at 10 cents. No doubt many will not be able to comply with the card put out by the Food Administration, and will find it impossible to secure any sugar. Do not rely upon the Food Administration to save your bees after you have taken too much of their stores from them.

In many locations bees will go thru the winter and spring in better condition, if they can be given protection from the prevailing cold winds. In one successful yard in the southern part of the State, a tight board fence serves as the only protection necessary. In another locality the colonies are brought close together, and a few spadefuls of dirt are thrown around the base of the hive. Not much protection is needed, but it can not be neglected entirely. The practice must vary in the different sections of the State, but the thing needed for your locality should be considered and put into practice this year. If every beekeeper will give the wintering problem due consideration, there will be more and better bees with which to start next year. It is a double duty this year to winter bees successfully.

The meeting of the Texas Honey Producers' Association held at College Station on July 29-30 in connection with the Texas Farmers' Congress, was without doubt the best meeting had by the beekeepers in many years. Those who attended last year will appreciate what is meant by that statement, for the meeting last year held the record. The sessions had an average attendance of 50. The best of most of the societies hold their meetings at the Congress. The attendance came from all parts of the State, from the lower Rio Grande to the Red River. Many new faces were there, which speaks well for the interest created by the program. Much discussion was evoked by the excellent papers presented on many timely topics. The program will be discussed for a long time by those who attended. Plans are already under way to make the meeting next year even better than this one.

College Station, Tex. F. B. Paddock.

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In Florida—In the June issue I brought up the subject of the experienced beeman helping the beginner with advice and supplies. My meaning has, unfortunately, been misunderstood in some quarters. In fact, a considerable kick has come from some long-established beekeepers, whilst some would-be beginners have come to the conclusion that I am running a bee-supply department on the gratuitous plan. Like Dr. Miller, I may be a "disputatious sunofagon," for I will not retract what I wrote in June, but will try to add a few amendments to meet the varied tastes of my correspondents. One man, with 12 to 20 colonies, monopolizes a good location,

but knows nothing about bees and will learn nothing, depending on the other beekeepers to do his extracting and make provision for his increase. He will not sell out nor let his bees be worked on shares. The sooner such "bee-owners" are out of the business the better I shall be pleased. Also, I have no sympathy for the man who wishes to keep bees in boxes or hives of any description and will not use full sheets of foundation everywhere, and prevent the nuisance of maintaining a drone factory near his neighbor's queen-mating yard. It is the one who is willing to put eight or ten dollars into a modern hive, and himself study and work with bees that I am willing to help.

Last month I spoke of there being a fine prospect for cabbage palmetto in this locality, and, altho the bloom has materialized and may have yielded well where nothing else was available, there will be no cabbage-palmetto honey produced. Altho we have made a fine crop whilst the cabbage palmettoes were in bloom, it is a crop of high-bush partridge pea honey. No doubt many producers will market their crops as palmetto, because they have not observed closely enough, and this unintentional deception will pass with the buyers because partridge pea honey has been branded by Prof. E. G. Baldwin of DeLand, in his articles to Gleanings, as "always dark red in color and dark brown in taste." This libel on a light honey of good quality has stuck with some of the buyers (please note, Mr. Selser), and they are offering 16 to 18 cents for it. A sample of what I know to be pure high-bush partridge pea honey is in the office of Gleanings, and I leave it to the Editor to correct the false impression that is current to the detriment of one of Florida's important honey plants. It is possible that Prof. Baldwin had in mind the low-bush variety of cassia which yields in September. At that season very many other sources of nectar are available, and the resulting mixture is of various colors and flavors, according to the particular locality in which it is produced. [The sample of honey referred to can't be located, but we are ready to accept your statement as to the excellence of high-bush partridge pea honey.—Editor.]

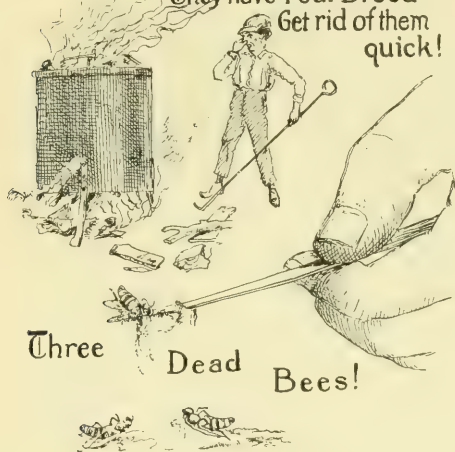
Florida beekeepers certainly have the advantage over their brethren of more northern States in that whilst they are now studying their wintering problems, we are preparing for another honey flow. A few words will cover the wintering proposition for Florida—leave at least 40 lbs. of honey and contract the entrances.

Cotton, as a honey plant for this part of Florida, has proved itself to be of no importance. It may be that this year the partridge pea has yielded so heavily that the bees have preferred to go three miles to it rather than work the cotton close to the apiaries.

Harry Hewitt.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Three Dead Bees!
Three Dead Bees!
They all rope out on a tiny stick;
The smell is enough to make you sick.
They have Foul Brood—
Get rid of them quick!



flavor, made of white clover, which was very plentiful in and about the city. There was no trouble to sell it right at the door for a fancy price. The only trouble was to supply the demand. I consider the bees a nice little side line, and they are surely an interesting little insect. They are very little trouble, especially the Italian bees. More people should keep bees, for the product that they supply comes in very nice at this time, especially when sweet is so scarce.

Columbus, O. E. W. Mendenhall.

Some Remarkably Good Wintering.

I wintered 84 colonies outdoors last winter, well packed, without the loss of a single colony. For over two months my apiary was snowed under without being shoveled out. But all came out fine. The secret of my success in outdoor wintering is simply top ventilation and plenty of stores. The winter of 1916-17 I wintered 117 colonies without the loss of a colony also.

A. H. Guernsey.
Ionia, Mich., R. D. 4.

A Back-yard Investment That Pays.

The four hives of bees you see in the accompanying illustration are in my back yard on a city lot in North Columbus, and my little daughter Gertrude is standing in the background. The bees have made 250 pounds of comb honey up to July 15 of this year. The honey is of the best quality and

An Easy Way to Feed.

A safe and easy way for the beginner or the owner of only a few colonies to feed is thru a screened board over the brood-chamber. With an extension bit bore four holes the size of the top of a can or pepper-box feeder in an escape-board or any board having a rim or cleats deep enough to allow the proper space at the top of brood-frames. With



A good investment in bees at Columbus, O.

HEADS OF GRAIN FROM DIFFERENT FIELDS

small tacks attach a piece of wire screen over each hole on the under side, so that the can will sit down in on the screen. The bees will get at the feed coming thru the perforation the same as if no screen was there. After adjusting the board the cluster will be under one or more of the openings, ready to take down the feed the moment it is placed there. The openings not used can be covered with a board or piece of thick cloth to keep, as far as possible, the heat from escaping. When the board is once adjusted, feeding can be done at any time without using the smoker, and no bees can escape. For the timid beekeeper there is no better way. Being over the cluster no robber bees can get near the feed. If the hive is chaff or large on top, a rim as high as the feeders can be set on top, which keeps the space above the brood warm and bee-tight by covering with a chaff tray. The escape-boards can be used the same with the screens on. Of course, a piece of section will have to be nailed over the hole after removing the escape, while using the board for feeding.

East Avon, N. Y.

A. C. Gilbert.



Queens Return to Former Locations.

Do virgin queens return to former location? In an editorial note following Jay Smith's article on

"How Queens Mark Their Hive," July Gleanings, page 405, mention is made that Mel Pritchard says that he always supposed queens mark their location each time they take a flight. Mrs. Grace Allen raises the question of virgin queens re-locating themselves in "Side Line," page 414.

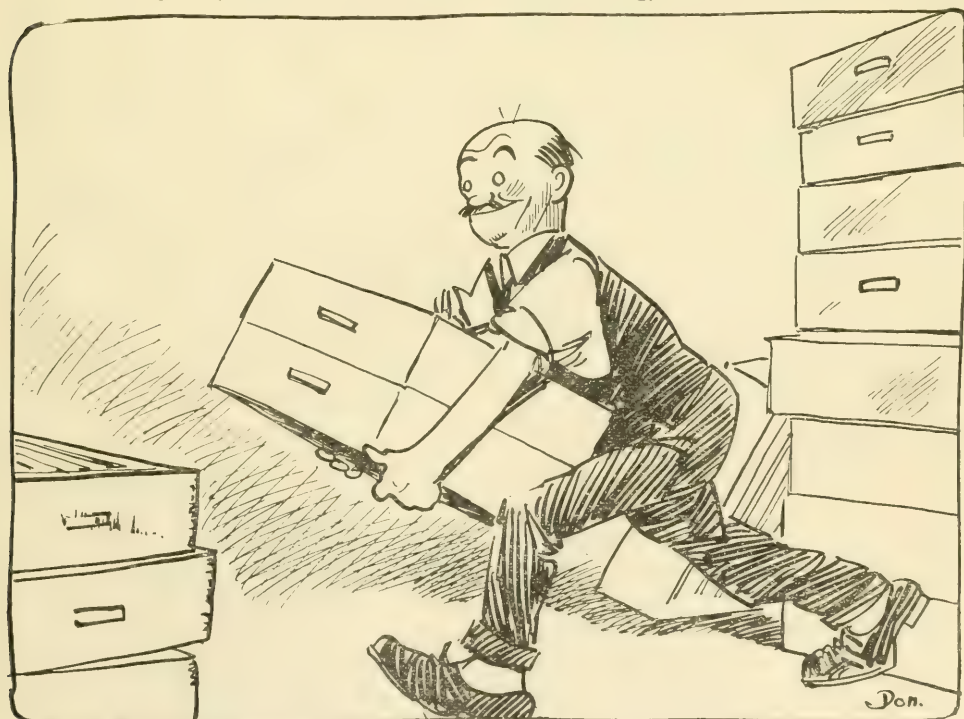
Like Mr. Pritchard, I thought queens would mark a new location before taking a flight, and would return to the same; but late experience has taught me different.

Having received two queens by mail, I wished to introduce them to nuclei, Nos. 3 and 4. Each of these having a virgin queen a few days old, to make them queenless I removed the virgins to another location in the yard with entrances facing a different way from their former locations. A few days later I found both the virgins missing in their new locations. Looking thru Nos. 3 and 4, I found, to my surprise and loss, that both had returned to their former locations. One of my bought queens had been liberated by the bees and killed. The other one was still in her cage.

This has been my only experience in re-locating virgin queens of that age. I have changed the location of many virgin queens before, but always did it soon after they had emerged from their cells, before they were old enough to have established their location.

John E. Keefer.

Millersburg, Pa.



Benny Sourweed got stung again. Traded his hive of bees for a mule. The mule died from tatin' sugar homes in two pound lots.

THE Pennsylvania State Beekeepers' Association held its summer meet at Dr. E. E. Sterner's home apiary at Wrightsville, Pa., on July 6. Addresses were made by Dr. H. A. Surface, Dr. Sterner, and Prof. Rambo. It was the largest and best field meet ever held in York County.

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The next annual convention of the National Beekeepers' Association will be held in Chicago. Date and program not yet arranged.

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The Federated Massachusetts Beekeepers' Association held a union field meet at Norfolk County Agricultural School at Walpole on Aug. 17. Among those on the program were J. E. Crane, Arthur C. Miller, Allan Latham, and Burton N. Gates.

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The people of the United States are now on the same sugar ration as is England—two pounds a month to a person. France is allowing only 1½ pounds a month to a person, and Italy is allowing her people only one pound each a month. But none of our European allies is finding the sugar to supply even these small allowances at all times.

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The dangers of beekeeping and its good name, due to newspaper reporting and sensationalism, are illustrated by some results of Dr. E. F. Phillips' address in Medina on Aug. 15, when he said: "A beekeeper, who has no disease in his apiary, and who sells all of his honey and then asks the government for sugar with which to feed his bees until next season is the worst kind of a profiteer." The next day the leading two daily papers of Cleveland (which circulate all over the country) came out with reports of what Dr. Phillips said under these several head lines: "Hits Profiteers Who Feed Bees—Expert Tells Beekeepers Not to Give 'Em Sugar," and "Beekeeper Profiteers Cheat." Already beekeepers in Ohio are being charged with wrongdoing and "profiteering" if they ask for sugar.

* * *

The Editor of Gleanings has recently attended a number of beekeepers' field meets held in Michigan, New York, and Ohio. At the apiary of W. L. Lovejoy, Clarkston, Mich., on June 26, addresses were delivered by B. F. Kindig, State Apiarist, and E. R. Root, and field demonstrations given. At the apiary of J. N. Harris at St. Louis, Mich., on June 28, a similar field meet was held. Mr. Harris is one of Michigan's best beekeepers, and Gleanings will have some



thing to say about his beekeeping in a later issue. E. D. Townsend and family were present at this meeting. A field meet of the Western New

York Beekeepers' Association was held at East Aurora, N. Y., when Geo. H. Rea, special field agent for New York, was present. On Aug. 2 a very successful field meet and picnic of the N. Y. State Association of Beekeepers' Societies was held at an apiary of C. B. Howard at Hayt's Corners. Dr. E. F. Phillips of Washington was present at this largely attended meet. On Aug. 6 a meet was held at the apiary of A. H. Root (brother of L. C. Root) near Canastota, N. Y. Here addresses were made by Dr. E. F. Phillips, E. R. Root, S. D. House, Geo. H. Rea, and others. On Aug. 15 was held at Medina the field meet of the Ohio State Beekeepers' Association, when J. E. Vernard of Wilmington presided and Prof. Jas. S. Hine of Columbus acted as secretary. About 300 beekeepers were present, and it proved to be one of the most profitable and pleasurable beekeepers' meetings ever held in Ohio. Addresses were made by A. I. Root, Dr. E. F. Phillips, and Leonard S. Griggs, and a good deal of questioning done, besides a number of demonstrations given.

* * *

State Bee Inspector Chas. N. Green of Pennsylvania at a beekeepers' meeting held at the apiary of Edwin A. Wright, Ellwood City, Pa., on July 26, telling of the many possibilities in honey production, related how a very valuable chemical had been found in certain honey produced in a restricted locality in the northern part of Pennsylvania. This chemical served to crystallize honey in a short time, and its name and nature were not discovered until chemists at both Harrisburg and Washington had repeatedly made analyses. It proved to be a substance which had formerly been provided only by Germany and was never found but in one place in the United States, and then only in a very small quantity, in one of the western States. The market price when imported from Germany was \$8 per dram. Altho quantities of that gathered by the bees last season were destroyed it was estimated that about 1,200 pounds had been the amount. Mr. Green received a communication a few days ago telling him that the same sugar substance was being brought in this year and state representatives will be sent at once to ascertain just what plants the bees were gathering honey from, and it is possible that another of Germany's importations may be obtained in our country. Gleanings gets this item on the authority of the New Castle (Pa.) Herald and the statement of Mr. Wright.

QUESTION.—As I had just finished extracting my 1918 crop a well-known beekeeper happened in; and, looking at the honey in the large open receiving tank, remarked, "Do you know that

if you do not cover that tank tightly the ammonia in the honey will evaporate and your honey will lose flavor, and depreciate in quality?" As it is practically impossible to cover my tank air-tight, I wish you would advise me if the above statement is correct.

I extracted about the middle of July, after which I piled on the hives the empty supers of extracting combs to be cleaned up. Now, if I take them off and place them in the honey-house, I understand I am running a grave risk of moth-infested combs. What is the best thing to do? To leave them on the hives means a lot of work taking them down every time I wish to examine a colony. To take them off means moths. E. V. Tillson.

Ontario.

Answer.—We were not aware of the presence of any ammonia in honey, and wonder if your friend did not allude to the fact that if the honey were left uncovered a small amount of the aroma might be lost. However, even in regard to this, we do not think that you will notice any appreciable difference in the flavor of the honey, whether the tank is covered or not. After the combs have been thoroly cleaned, they may be carefully piled in the honey-house, taking pains that at the top and bottom of the pile and also between the supers, no opening is left large enough for the admission of the wax moth. Such stored combs should be examined every two weeks during the summer, and, if any evidence of moths occurs, the combs should be fumigated immediately, or else given to strong Italian colonies to be cleaned up.

Question.—Would it be too early to take off top super of combs the last of August and let them store what honey they can get from that on in the brood-chamber? or do you leave them on so they can put what they get in the fall from fall flowers in the super? Buell Buddinger.

Pennsylvania.

Answer.—In your locality it would be well to leave the super on, as you will probably obtain some surplus from sumac after the main flow.

Questions.—In the book entitled "Practical Queen-rearing," by Frank C. Pellett, on page 85, is the following for making increase: "When the colony becomes populous place the queen on a frame of brood in an empty hive-body and fill out with empty combs. This is set on the regular hive-stand occupied by the colony. * * * Now place a queen-excluder over the hive-body containing the queen, and over this a super of empty combs. On top of these is set the original hive-body containing the brood. A hole is bored in this upper hive-body to give the bees an extra entrance above. About 24 hours later a ripe queen-cell is placed in the upper story with the brood. The queen will emerge in a day or two, and in due time will leave the hive on her mating-flight, by way of the auger-hole. Within a few days more she will be laying in the upper hive-body, while the activities of the

GLEANED BY ASKING

E. R. Root

bees will continue without interruption in the lower story."

(1) Is there any danger of the colony swarming, either when the young queen takes her mating flight or before that time with the old queen? (2)

He says, "When the colony becomes populous." Will this system work after preparations for swarming are started? or is it necessary to do this work before they think of swarming? (3) Could a laying queen be introduced after 24 hours, instead of a "ripe queen-cell," as given in the book? (4) Would the upper entrance be necessary if a laying queen were given, or does it prevent swarming? (5) Would two queen-excluders be any advantage—one between the first and second story, as suggested, and the other between the second and third story? (6) Would slipping the top hive-body forward to give an entrance be as good as the auger hole? John E. Geiger.

Kansas.

Answers.—(1) Not much danger unless the colony has already contracted the swarming fever. (2) We believe this system tends to prevent swarming, even if applied after the bees have begun building queen-cells. (3) Such introduction would be very risky. (4) An upper entrance should be given. The upper and lower stories are then virtually two separate colonies, each with its own entrance and its own queen. (5) Yes, two excluders would be a decided advantage. When only one excluder is used, one of the queens may be killed. (6) Except in very hot weather we should prefer the auger hole, since with this smaller entrance the brood would not be as apt to chill.

Question.—Please tell me how Arthur C. Miller uses his smoke method to introduce a queen.

Tennessee.

W. T. Anderson.

Answer.—On page 442 of the A B C and X Y Z of Bee Culture you will find a very complete discussion of the Arthur C. Miller method of introduction. In general, we may say that the entrance should be closed, leaving only an opening one inch square. Into this the nozzle of the smoker is inserted, and several good puffs given until, in a few seconds, the bees begin roaring. The entrance is then completely stopped and left for 15 or 20 minutes. Then the one-inch square opening is again given them, and the whole entrance not given for over an hour, or, better still, not given until the next day.

Question.—In one of my hives there are no queen-cells and no eggs nor grubs, yet the queen is not to be found. What should be done? I introduced one queen but she was killed.

Pennsylvania.

H. O. Whitlinger.

Answer.—Immediately after the honey flow the queen usually lays fewer and fewer eggs, and may even stop entirely for a time, so that the absence of eggs and young larvae in the hive does not prove conclusively that the colony is queenless. We suggest that you give such a colony a frame containing

eggs and young larvæ, and watch developments to see whether or not they will start queen-cells, thus showing their queenless condition. Of course, if they have been queenless for some time, it is possible that they now have laying workers, and this might account for the destruction of the queen that you introduced. To dispose of the laying workers, about the best plan is to distribute the combs, with adhering bees, to other strong colonies, exchanging for good frames of brood with the bees, taking about two from each colony. You will then have, instead of the worker colony, a good colony of brood and bees to which it will be perfectly safe to introduce your queen. Another method that is sometimes employed is simply to take the hive several rods away from the apiary and shake the bees onto the ground and then return the hive to its original location. The workers will return to the hive, but the laying workers can not find their way back and will be lost. A queen can be introduced then more safely. If laying workers are present in the hive, you can determine this by noticing the way the eggs are put into the cells. If they are placed irregularly, some of the eggs being placed on the sides of the cells, and perhaps several eggs placed in a cell and nothing in the hive but drone brood, they without doubt have laying workers. The work of a drone layer would have much the same appearance, but there would be apt to be less brood and the eggs would be more likely to be placed at or near the bottoms of the cells.

Question.—Please give me some information in regard to the most efficient way to advertise honey to grocers and consumers.

R. M. Woodring.

Pennsylvania.

Answer.—About the best advertisement that we know of is a fine grade of honey. It always sells itself. You might, perhaps, be interested in giving lectures in the high schools in your own town and the neighboring towns, at the same time giving samples of honey and various things made with honey. It would also help considerably if you could get the domestic-science teachers interested in the use of honey, perhaps giving them free samples with some good honey recipes. Another effective way of getting your honey before the public is to advertise by roadside signs or thru the local papers or enter your honey at the various fairs in your locality. An occasional display of honey and bees at some local grocery is also a great help.

Question.—Could you tell me what is the matter with my bees? They are killing all their queens. After the queens have filled their hives with brood, then the bees kill them. Most of the queens were young ones. My brother is having the same trouble with his queens.

M. G. Freeman.

Michigan.

Answer.—We can not be certain of the cause of the disappearance of your queens and those of your brother. It may be that when you removed the supers from the

hives the queens were above and you smoked them down below; the bees may have been more or less demoralized, especially if a little robbing were going on at the time. Under such conditions we should expect that many of the queens would be balled. Another possible explanation might be that you handled the colonies at an unfavorable time. If handled when the bees are very cross, they are quite liable to ball their queen.

Question.—In case of a cross colony how long may a queen be left in the introducing cage when it is put into the hive? Would any harm result by leaving her caged five days before giving the bees access to the candy?

Geo. W. Meyer.

Pennsylvania.

Answer.—If the colony of bees is unusually cross, and you have had difficulty in introducing, you may leave the queen caged for as long as eight days. By that time she will probably begin to lay eggs in the cage. If you then allow the bees access to the candy, they will not be apt to ball the queen when liberated.

Question.—I shall appreciate it very much if you will give me your opinion as to the quality of honey extracted from brood-combs in comparison with that from combs free from brood.

Mississippi.

J. W. Carpenter, Jr.

Answer.—Of course no one should extract from the brood-chamber, using combs that have brood in them, but there are many beekeepers who in the spring allow the colonies two stories for brood-rearing, and then later shut the queen down into one story. Now, those frames above that have had brood in would not be quite as clean, nor result in quite as nice honey as those combs in which no brood was raised that year. Still, the difference is so slight in nice new combs of this kind that we should never hesitate to extract them along with the other honey; but, if old dark combs are used that have long been used in a brood-chamber, you may notice a perceptible difference in the color of this honey. However, as we have said, if combs are used but a short time in the brood-chamber, and then used for extracting, the difference in color of the honey will never be noticed, and, more than that, we believe this is a good plan, because the cocoons add so greatly to the strength of the cells. We should prefer to have all of our super combs used for a short time in the brood-chamber in order to make them good and strong for extracting.

Question.—A colony of my bees swarmed with a virgin, and I tried to return them; but every time I dumped a load in front of the hive they would return to the cluster. At last they became angry and started to sting, so I left them in the cluster. Every time I try to get them they become angry. They are building combs on the tree about three feet from the ground. Will you please tell me what to do with them, and the reason of their staying in the cluster instead of absconding?

Massachusetts.

Albert Waugh.

Answer.—The reason that the colony was so cross every time you tried to shake them

from the limb was because they were practically without honey. Even swarming bees, if they have no load of honey, will be quite vicious. In regard to their staying on the limb and starting comb there, it is very difficult to say why they did that; but every year swarms here and there do this very thing. We have known a colony to hang out on the limb of a tree until they had eight large-sized combs all built nicely parallel to each other, almost as tho one had just lifted them out of a hive. At the time you tried to have them it is evident that you did not get the queen with them. Probably she stayed with a few bees on the limb, and that is the reason the others went back. If you could get them all, queen included, and give them a frame with eggs and young larvae, there would be no trouble about their staying in the hive. Now that they have already built combs, perhaps you could transfer these combs into the frames, tying them in and putting them in the hives until the bees have time to attach the combs to the frames. Since the colonies are good Italians it would be a pity to let them go.

Question.—In your 1912 edition of the A B C book, under "Increase" you say, "Set the body (with no queen) on top." Why not put a laying queen in the top at once by the honey method?

Nebraska.

F. Kingsley.

Answer.—We have never been very strong advocates of the honey method, for the reason that we believe a queen after having had a honey bath is never quite as good as before. A queen could be introduced to the queenless colony above; but in doing so one would run some chance of losing one of the two queens. By the method given in the A B C and X Y Z of Bee Culture you will note that the upper hive is moved away, so that the two queens are not left in the same hive, in supers right next to each other. If one wishes to keep two queens in the same hive, and do it successfully, it is better to have more than one excluder separating the two colonies.

Questions. —(1) If I am raising queens in a weak colony of young bees, and they accept about 28 grafted cells, and I give them a good large spoonful of royal jelly, what will the bees do with it? (2) Can bees make a drone out of a worker egg? Is there any condition which will cause bees to do that? (3) Why do my bees begin drawing out full sheets of foundation in the super at the bottom? Yours commence at the top, do they not? When I lived in Ohio mine did; but here they begin at the bottom, draw it out, attach it all along to the bottom-bar, and store the honey from the bottom upward. I have seen sheets drawn out five inches high, filled and capped, and at the top nothing but foundation. Would you think in this case that the shallow frames would be better for me to use? (4) If I take out of the hive about three frames of bees and brood, and put them into another hive 30 or 40 feet away, will they build up and make a colony? (5) Can bees control the hatching of eggs? Can they cause them to hatch at will—either hatch them immediately or keep them 10 days or two weeks and then hatch them? I believe they can.

Arizona.

J. B. Douglas.

Answers.—(1) The bees would probably

eat the royal jelly, but would not place it in the queen-cells. (2) No. This is impossible. (3) The refusal of the bees to draw out the tops of the sheets of foundation is probably due to the excessive heat. In Arizona the colonies should be well shaded and provided with plenty of ventilation. There should be double covers or shade-boards, and it is best to have the entire colony covered with a good bee-shed. (4) If early enough and given a slow flow, such nuclei may build up into good colonies. (5) We do not know whether bees could do this; but we feel somewhat doubtful whether they ever do. If you have any proofs along this line, we should be glad to learn of them.

Question.—What shall I do with the Alley trap? The bees have very hard work to get thru. An hour after putting the trap on one of my hives the air was thick with bees from the hive, and the alighting-board was covered with balls of pollen that they rubbed off trying to get thru. I immediately removed the trap so they could get in, and they quieted down in 15 minutes. I think the perforations are too small. Could not the slots be made wider and still trap the drones?

Ohio.

W. C. Greenleaf.

Answer.—We never advise the use of the drone-trap except as a temporary arrangement, for these traps do interfere considerably with the work of the colonies. Except in unusual cases, we believe that, when bees are bringing in either pollen or honey, there should be no obstruction in front of the hives. As for the little wider spacing that you suggest, it would certainly result in some of the drones squeezing thru such space.

Question.—Can you tell me about what the average prime swarm weighs and also the second swarm?

Walter Garabrant.

New York.

Answer.—The weight of prime swarms varies greatly. A seven- or ten-pound swarm would be a good one. The second swarms that issue might be perhaps half as large, or even smaller than that; and finally, toward the end of the season, if the second swarms are still allowed to issue, it will be found that they will be very small, perhaps containing no more than a pint of bees.

ANSWER BY C. C. MILLER.

Question.—You say that you provide a two-inch entrance for your bees while in winter quarters. Do you make any provision for upward ventilation, such as removing covers and replacing with burlap? or do you put on the regular hive cover allowing no ventilation on top?

A. J. Gardner.

Quebec.

Answer.—No opening for ventilation is needed above, if there is opening enough below. No opening is needed below, if there is opening enough above. When I had box-hives I turned them upside down, following the teaching of M. Quinby, leaving the hive entirely open above and closed below. Now, with the very large entrance below, there is no opening above, the covers being glued down just as they were on the summer stands.

"THIS coming season I intend launching out in a larger way and becoming a commercial beekeeper, mainly to aid my brother who has returned broken in health after two years of war."—Harold C. Hardeastle, Rotorna, Auckland, N. Z.

BEES, MEN AND THINGS

(You may find it here)

"Not one pound of honey yet this year."—Irving E. Long, Linn County, Mo.

"I will buy home-produced run honey."—Rowe, 28a Moy Road, Cardiff, Ireland.

"My 767 colonies in 10 apiaries are surely dragging in the honey."—F. S. Harter, Platte County, Wyo.

"We have had a fine year in this section, and with good prices the beeman is happy."—F. A. James, Hale County, Ala.

"In Ireland beekeepers intend to stand out for about 48 cents per pound for extracted honey, wholesale."—Irish Bee Journal for July.

"Very little surplus honey in this locality. There was plenty of clover but weather was not right for nectar secretion."—M. A. Shepard, Pierce County, Wis.

"It is contrary to law to keep bees in boxes or on frames that can not be removed from the hive."—Notice issued by inspectors of Foul Brood Department of Agriculture, British Columbia.

"I wrote you not long ago that basswood was in bloom but no honey in sight. Since then I have secured two supers of basswood and bees working in the third super."—E. Wilson, Orange County, N. Y.

"I have a golden Italian queen on which my value is \$50.00. She has 144 sections now just about full. She is one and one-half inch long and fills 10 frames full out with brood."—A. S. Schwerkengost, Armstrong County, Pa.

"Just finished extracting. Took 2,680 pounds extracted and 400 pounds of chunk honey from 38 hives and will extract again in September from 60, as I divided and requeened in July. All sold at an average price of 19 cents per pound for both extracted and chunk."—J. E. Sutton, Marengo County, Ala.

"The bees around Colorado Springs never before have had such a chance to gather nectar as they have had this summer. Many colonies have one and two supers full now. Sweet clover and Rocky Mountain honey plant are at their best now, and a recent fine rain insures several weeks more of good forage."—F. M. Perkins, Colorado Springs, Col., Aug. 10.

"Yesterday, June 20, I had more reason to think of you in the old bee yard. Saw a swarm issue from an old wooden hive standing in the open window of a thatched

roof of a French farm house. The old Frenchman who owned them didn't seem to know much about bees—tried to get the swarm with an old tin pan."—

Corpl. Alpine Couse, son of Henry Couse, of Cookstown, Ont., a veteran of the Canadian Armies in France, in a letter to his father.

"If you want to have a success that will prove 99 per cent in introducing queens, introduce them by the honey method only. I believe I can introduce a queen into a yellow-jacket's nest."—Henry S. Bohon, Roanoke County, Va.

"Since eating some very green, unripe honey two years ago, I have been unable to eat but very little at a time without being affected by severe stomach pains, perspiration and an itching sensation all over the body."—L. Bellman, Erie County, N. Y.

"A winter packing case has been rarely seen in Maryland heretofore and never in this locality. After last winter's severity it is very probable it will be less of a rarity as I already hear plans for protection in the future."—C. W. Marshall, Baltimore County, Md.

"While local incorporations of bee men serve their purposes well and good, yet a properly incorporated state institution, to my notion, fills the vacuum—not run in the interest of a few supply concerns as has been the case in past years."—G. W. Bercau, Los Angeles County, Cal.

"Honey is no higher comparatively than wheat. Wheat was \$1.05 per hundred in August, 1914; honey was \$7.00 per hundred then. Wheat is now \$2.93 per hundred, and honey is \$20.00 per hundred. Wheat is plentiful and sugar is scarce."—Frank A. Childs, Delta County, Colo.

"I am a one-armed beekeeper having started with one swarm three years ago. Now have 23 stands and have sold \$180.75 worth of section honey this year to date at my door. Besides, I work by the month on an Illinois corn belt farm about 14 to 16 hours a day."—Milo Trussel, Vermilion County, Ill.

"White honey crop here was an entire failure owing to sourweed failing to bloom. During the early flow from poplar bees were too weak to gather much surplus. They have now filled their hives with honeydew, some colonies having stored as much as 100 pounds in the supers."—P. C. Asher, Campbell County, Va.

"June 12 last I requested, as County Food Administrator, that sweet clover be allowed to grow till after bloom. This request was made to the road commissioners, and was universally observed. One beekeeper had ten stands and has already ex

tracted 52 gallons and has at least that amount yet to extract besides one super of box honey."—L. D. Burnham, Food Administrator, Champaign County, Ill.

"Have had all the orders for bees and queens that I could sell and sent a lot back. I thank the editor of *Gleanings* very much for using his influence in getting pound bees sent by mail. It is too late for me to send by mail this year, but I hope to use the mail altogether next year."—C. H. Cobb, Yell County, Ark.

"I would say that in Cuba I suppose there will be a yield of something like 2,000 barrels of honey, and of this amount I have 600 barrels, which I have engaged to the Sugar Products Co. The steamer that is to carry the Cuban honey to England is a tank steamer fitted to carry liquid honey and is calculated to carry all of Cuba's 2,000 barrels. I have heard that the Sugar Products Co. have instructions to obtain up to 2,500 barrels."—Adolfo Marzol, Cuba.

"I had three hives of bees last fall, and having no cellar I screened them in and put them in a room in the house. I kept them there for four weeks; but they were restless so I took them outside and made a tigh of boards and tarred paper and then covered them with blankets and straw. They did not get a flight until Feb. 2. Then they were out every fine day, but did not build up and finally two of the colonies died out. The others recovered."—Arthur Robinson, Wilkin County, Minn.

"You will perhaps remember that I cut all the fingers and the thumb off my left hand two years ago. The family all said I would have to retire from active work. However, I am fond of the bees and did not like 'skying the towel,' and so I kept at it and now I am getting busier every day. My son Phil made me a hook and if you could see how well it works you would say that Providence intended beekeepers to have one hand and a hook."—Major Shalard, South Woodburn, N. S. W., Australia.

"The lower mainland of British Columbia will not harvest an average crop of honey, owing to the months of April, May, and June being very dry, resulting in a short hay crop, and the serious outbreak of European foul brood throught the part occupied by the largest number of beekeepers in British Columbia. It is hoped fire weed and other nectar-bearing plants will give sufficient stores for winter use. Twelve-ounce jars of honey are retailing at 40 cents. Offers of 25 cents and 30 cents per pound have been made for honey in 60-pound cans."—Williams Hugh, Cloverdale, B. C.

"It chanced that just as Mr. Green arrived in town a colony of bees swarmed on a branch of a tree about 60 feet above the ground. Prof. Hartline suggested that men be sent up to cut off the branch and lower it with a tackle, but Mr. Green had another plan. He made of wire a kind of cage known

as a swarm-catcher and this he attached to a long cord or fishing line. The pitcher of the school baseball team was asked to throw a baseball over the limb of the tree to which was attached a light cord and to the end of which lighter cord he tied the heavier one. The wire cage was drawn up to a point just beneath the swarm and then by means of the heavy cord the swarm was disturbed a little and a part of the bees swept off into the cage which was lowered and placed beside the hive in which these bees went. On the third attempt the queen was brought down and was soon within the hive."—A Pennsylvania newspaper.

"Last summer I was going to work in a bee yard near Ithaca, N. Y., but when war was declared I joined the regular army instead. Since then I have traveled over quite a great deal of France, coming here about March 1, and everywhere I have been there seems to be an excellent outlook for bees. I have seen a few small apiaries kept in the old-fashioned way and have noticed only black bees here. In northern France this spring I noticed many flowers and one in particular on which the bees were at work, but saw only a few colonies in the locality. I am making a study of beekeeping conditions here. I was in Paris the first day the long-range German gun fired upon it, and the same night we had an air raid. I am going to write *Gleanings* (which I used to read) again when I glean more facts as to the beekeeping of France."—Clinton VanPelt, Sgt., Meteorological Division, Signal Corps, A. P. O. 723, A. E. F., via New York.

"There is a sweet opportunity for professional apiarists in western Iowa, eastern Nebraska and southeastern South Dakota. I have been over much of this region recently and find this section has developed the tame grasses, white clover, sweet clover, alfalfa, etc., much faster than the farmer beekeepers have occupied the bee pasture. Bee diseases and careless wintering have eliminated many of the farmer beekeepers so that whole townships and possibly entire counties have not a single colony and some neighborhoods never have had any. There are also some good basswood locations adjacent to the Missouri and other streams. Bees in carlots could be advantageously distributed in some sections by expert beekeepers by locating the home yard at a railroad point and out yards within a radius of 10 to 25 miles. Bees do well 200 miles west of Sioux City and Omaha. But do not ship your bees into this territory until you investigate conditions. There is room enough without crowding beemen already established. I suggest that those who are interested should write to the County Agricultural Agent, the State Entomologist and the secretaries of the beekeepers' organizations for more information, then visit the locality."—Morris F. Laughlin, Rock County, Nebr.

IT is time to discuss the question of feeding—a possible necessity always in the fall. In those localities where there is little or no fall flow it will be best to feed in September, if the stores be low, and brood-rearing has almost entirely stopped. If there is a good fall flow, such as that from goldenrod, aster, heartsease, etc., brood will, perhaps, be found in most of the combs. In this case it would be necessary to delay feeding until a few weeks later, when there is less brood and so more room in the hive. But if stores are to be given, it is always an advantage to feed early, so that the stores may be well sealed. When first placed in the cells, the stores are too thin for good wintering; and so, if there is time before winter, the bees evaporate or “ripen” the stores until of the right consistency, when the stores are sealed. If given poor stores, or fed too late, the stores will be so thin that it will be apt to result in dysentery and death of the colony by spring.

Amount to Feed.

For outdoor wintering, about 25 or 30 pounds of sealed stores will be plenty in most of the Northern States. In some instances no feeding at all will be required, for sufficient honey will have been stored in the brood-nest to meet the requirements of winter, and it is always (and especially during war times) a poor plan to extract from the brood-chamber and then feed syrup. The sugar stores should be given only to those having a shortage of honey. The beekeeper should not plan to feed in the spring, if he can possibly avoid it; but enough should be given in the fall to last till the next honey flow. Of these stores fed in the fall, the bees consume only a small part at the time of feeding. All the rest is stored in the combs, and saved to tide them over the winter months, when no nectar can be gathered.

Examining For Stores.

In estimating the number of pounds that will be needed, some experienced beekeepers simply judge by lifting the hive; but, if the beginner wishes to be on the safe side, he should remove each comb from the hive and make his estimate by noting the amount of sealed honey in each frame, and remembering that a full standard-sized comb holds from five to six pounds. The equivalent of five full combs will be sufficient; but this amount should be left in seven or eight frames so that the brood-chamber may be contracted to smaller compass by removing empty combs, and, later, the extra space at the side packed for winter, which point will be mentioned more fully in our next issue. When doing this work, if the bees are not gathering honey, they

TALKS TO BEGINNERS

By the Editor

will be inclined to rob; and, therefore, before starting this work all entrances should be contracted, and it may also even be found advisable to

work in a tent such as that described in our August issue. Just as last month, any colonies found weak or queenless should be attended to immediately, the weak being united with other colonies, and the queenless being either united with weak ones or given a queen.

In order to leave the bees in good condition for winter no excessive amount of bee-bread should be left in the hive, as this may cause dysentery. Combs having a large amount of bee-bread should be lifted out, and used the next spring if needed. Also a few old dark combs should be left at the center of the hive for the bees to cluster on. The cells of these old combs are lined with so many layers of cocoons that they are much warmer than those of newer whiter combs.

After having marked on each hive the amount to be fed, the whole apiary may be checked up to find the amount of syrup required and the number of feeds necessary. If ten-pound friction-top pails are used as feeders, probably all the needed stores may be given in one or two feeds.

Feeding Honey.

Just now, while there is such a shortage of sugar, any deep supers of honey saved over from extracting time will be found very handy for winter stores, if one is certain that such honey does not come from diseased colonies. Those combs with no stores or brood should be replaced with these combs of honey. But if there is not enough of such honey, sugar stores must be resorted to if sugar can be obtained.

How to Get Sugar.

To obtain sugar, the beekeeper should apply to his local food administration for a blank which should be filled out stating his needs, number of colonies and surplus obtained. This should be sent to his State capital, to the Federal Food Administration, Sugar Division, which will grant him a permit to buy of his grocer or wholesaler. There will likely be no trouble in obtaining the permit, but to get the sugar may not be quite so easy; for, obviously, the grocer or wholesaler can not sell what he does not possess. The present condition is causing considerable worry among beekeepers who so far have been unable to get either honey or sugar enough to feed their bees. To such our best advice is to move the bees to some swamp or other location where there is a good fall flow. Of course this honey is not as good for wintering, but it will do very well as a part of the stores. After this fall flow, the remaining eight or ten

pounds requisite should be supplied in the form of sugar syrup. If good sugar cannot be obtained, one may perhaps be able to get enough damaged sugar for this final feed.

Easy Method of Feeding.

Among a number of good feeders on the market we shall mention only one—the friction-top feeder which has been fast coming into favor during recent years. These are ordinary five or ten-pound friction-top pails having the lids punctured with about 130 holes made with three-penny nails (punctured by machinery if so ordered). The feeders are filled with a syrup—two or two and a half parts of sugar to one of water, the density depending upon the lateness of the season—the later, the denser. In cold weather the syrup should be quite thick and warm. Over the colony to be fed, an empty super is placed, and one of these friction-top pails of syrup inverted immediately over the cluster, and covered snugly with an old sack to prevent the heat of the cluster from escaping above. A still handier way is to place between the empty super and brood-chamber an escape-board from which the escape has been removed, and invert the feeder over the hole. Some strong colonies will take the contents of a ten-pound pail in a day. If not taken as rapidly as it should be, the residue of the cold feed should be removed and replaced by warm syrup.

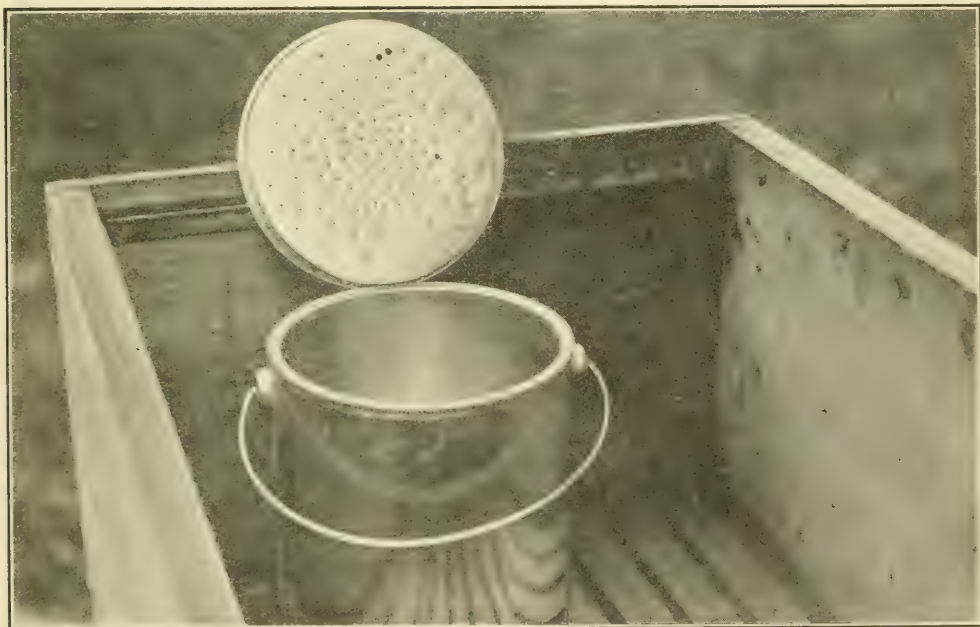
Moving Purchased Swarms.

In the May issue we advised buying new swarms, to be hived and kept by the farmer until fall. This month would be a good

time to move such colonies home. (See "Moving the Bees," May Gleanings, page 303.) If very warm weather, it may be necessary to screen the bottom as well as the top, and to dampen down the bees with cold water whenever they begin crowding the screen. These bees should be shut in very early in the morning or late at night when no bees are in the field. If clustered out in front they should be smoked into the hive before screening the entrance. On arrival at the new location the bees may be helped in marking their new location by placing weeds or brush in front of the entrance for a few days.

Moths in Combs.

There is one other important item of September work that should not be neglected. The extracting-combs, after the bees have cleaned them out, were doubtless piled in neat piles in the honey-house, care having been taken to leave no opening large enough for the access of the moth miller. During hot weather, every two weeks or even oftener, these should be examined for wax worms. At their first appearance such combs should be placed over strong colonies, which will soon clean out the worms. Any one who neglects these combs until they are badly affected will probably be obliged to resort to the bisulphide treatment, as given in the August issue, page 491. It should be remembered that combs are very valuable property for the beekeeper; and the possession of combs instead of foundation means many more pounds of honey the coming season.



The five- or ten-pound friction-top pail with lid punctured is filled with syrup (2 parts sugar to 1 part water), the lid put on tight, the pail inverted within an empty super directly on the top bars of the brood frames above the center of the brood nest, and covered with an old sack or blanket; then the hive cover is put on and the bees left to feed at leisure.

IN years past I had been in the habit of having in this journal a department headed "Travels." I remember that some time ago a good friend wrote me asking if I was going to "travel." If so, he wanted GLEAN-

INGS; but if not, he did not think he could afford to take it. Well, every little while in my old age I feel again the impulse to travel and learn as much as possible about this great, wide world, even if I am toward 80 years of age. I want to see what provision our nation is making for "daily bread." I also want to see how they manage to carry on business with the shortage of help this great war has caused; and I want to know, too, how much the world is becoming inclined in these latter days to follow Him who said, "I came that they may have life, and may have it abundantly." The children said I was getting to be too old to travel; I would get waylaid and robbed in the big cities, or run over by the cars.* And Mrs. Root herself said I would be sure to get sick, and then a lot of other things "might happen." My grandson Wynne, who wrote the article on food, on page 500 of our last issue, ran me down to the depot with the electric automobile. In the great city of Akron I called on my niece and her husband, Mr. Terry Hastings. They gave me a nice supper, and put me on the sleeper bound for Chicago. By the way, they were just sitting down to the table when I called; and when I was speaking about short cuts between producer and consumer they showed me their beautiful garden just back of the house. Every bit of it was high-pressure

*It is true I did not get run over by the cars or else I should not be here dictating; but, on my return home, in the great city of St. Paul I followed the crowd, carrying a big, heavy valise. An engine was coming toward us, but, like the rest, I thought there was plenty of time to get out of its way. On account of the heavy valise I was one of the last to get over. I still thought there was plenty of time, but a big policeman stationed there to look after old people like myself judged otherwise. He swept me off my feet, big valise and all, and set me over on the platform in a place of safety so quickly I hardly knew what had happened. When I expected him to give me a scolding for my recklessness or want of judgment, he did not even say a word, but kept right on attending to his regular business. I suppose he is doing the same thing just now while I write these words.



Give us this day our daily bread—MATT. 6:11.
It is not good that the man should be alone. I will make him a help meet for him.—GEN. 2:18.
I came that they may have life, and may have it abundantly.—JOHN 10:10.

gardening, and at the supper-table Terry remarked that every article of food on that table came from their back-yard war garden.

Both good friends went down to the train with me, put me on the right sleeper for

Chicago, and once more I was alone in the great busy world's traffic.

On reaching Chicago I was taken in hand by the manager of the A. I. Root Co.'s supply house and taken over to the proper depot and put on board a car for Poynette, Wis. By the way, I am always pleased to see girls and women occupying important posts in our great business marts. In that great depot in Chicago there were two bright women in charge of the "information bureau." I asked when I could get a train, and how soon I could reach Poynette, Wis. By the way, it was a pleasure to me to see how quickly they investigated the different routes to reach the place, and to see them enter into full investigation, as if I was a particular friend of theirs.

Our readers, or at least some of them, will recall that Poynette is the home of Mr. Forrest, whom I visited about a year ago, and wrote up his electric windmill—see page 882, Nov., 1917. By the way, so far as I can ascertain, friend Forrest and I are the only men living, or the only two men who have ever lived, who are running an automobile by electricity generated by wind power. In other words, we are the only two men on the face of the earth who feed their "steeds" neither hay nor grain, and not even gasoline. But we feed the steed only on wind, which the great Father in his kindness gave to each and all, if we will only reach out and up and grasp it.

When I arrived at the town of Portage, where we had to change cars, there were three long trains of soldiers—American boys *en route* for the war. For some reason or other our train was held back about two hours to let these soldiers pass; and while the three long trains of boys—or at least they seemed boys to me—were awaiting orders, a lot of the young girls in and about Portage came to see the boys off. Altho these boys were bound for a foreign land, perhaps never to come back, they

seemed one and all in high spirits, and many of them seemed to be thinking it was the time of their young lives, to see the world, and do their part in saving our nation. Well, as the girls strung along beside the trains of cars, giving the boys smiles, the boys reached down and shook hands with them. It was nothing more than handshaking; and I felt from the bottom of my heart that it was the right and proper thing for the girls to bid the boys a hearty Godspeed, and show them their sympathy. Sometimes the boys would get hold of a girl's hand and would not let go right away. But it all ended in shouts of pleasantry as the cars pulled out. May God in his mercy bless the efforts that are being made to keep these boys (and *girls* also) well chaperoned and protected from evil when they go to fight our battles!

As Mr. Forrest was exceedingly busy with his electrical projects as well as harvesting his crops, Mrs. Forrest came to meet me at the train. She, too, seemed to recognize that the responsibilities of the world are now resting on *women* as they never rested on them before; and, when I was reckless enough to suggest that Mr. Forrest should drop his work and go with me away up into Wyndmere, N. D., she assented at once. She said he had not had a vacation for years, and richly deserved one; and as the Manikowske brothers had already paid *them* a visit some time before, it was no more than fair that he should improve the chance to visit the brothers' place, the place of all the world where electric windmills are being made. By the way, friend Forrest was just diagnosing a problem in wind and electricity when I arrived. His sixteen-foot windmill is on the summit of quite a hill. Now, his house is also well up on a hillside; but the mill is still higher up. His automobile is driven by 40 exide storage batteries. Besides this he has 30 or more batteries, part of them homemade; so you see when the batteries are all stored he has power enough to do a lot of work on his farm. Let me pause a minute right here.

I recently saw a statement that storage batteries have attained such a wonderful degree of efficiency just now, that a single cell or a group of cells will, when fully charged, hold power enough to elevate themselves *six miles* straight up in the air. Say a single cell of a storage battery weighs from 15 to 20 pounds. This cell, when properly charged, will give out power enough to raise that weight of 20 pounds six miles. I thought at first that this must be an exaggeration, but listen.

The little electric auto, which I have pictured for you on page 387 of GLEANINGS for May, can be pushed forward and backward on a level floor; but it takes a pretty good strong man to push it any distance. Now, the 28-cell storage battery will push it over fairly good roads 62 *miles*; and, if it will do that, would it not raise the naked batteries alone almost six miles straight up?

Well, friend Forrest has quite a little work to do in grinding grain for his neighbors for different kinds of war bread; and this big windmill on top of the hill (which runs an upright shaft), after storing all his batteries, has quite a little idle time, with the wind they have there on those Wisconsin hills, especially in winter.* Now, he has built a little house right beside the big windmill, and is preparing to take power to grind the grain directly from that upright shaft without using electricity. The Wyndmere people, as you may remember, do not have any shaft to their mills. The dynamo is right close up to the revolving wheel, and a wire brings down the electric current. Therefore to work a mill with the Wyndmere outfit, the power must first be converted into electricity at the top of the tower and then changed back to mechanical power where the mill may be located. I think this way of carrying power loses some 30 to 40 per cent; but gearing and belting, shaft, etc., lose quite a good deal more power. Now, friend Forrest has not got his grinding mill located yet; but with the plan he had in mind when I arrived, the farmers would

*Before leaving this pleasant home I want to tell you of another electrical invention he had recently installed. I think it is called a "hot-point" warmer. A beautiful concave mirror is supported on a little stand, and right in the focus of this mirror is a coiled wire that becomes redhot when the current is on. By swinging the mirror you can direct the heat toward any person or spot in the room. If you have the earache it will heat up your ear and one side of your head like a hot-water bottle. I at once inquired the cost of the apparatus and the amount of current it used. If I remember rightly the price was, between six and seven dollars. After some figuring he announced that the current required was about what it would be for eight electric-light globes. The device is new, but I think it can be obtained of almost any dealer in electrical supplies. Right here comes a point in favor of electric heating. Instead of wasting a great lot of fuel in securing a little heat, with this electric heater you can put the heat right where you want it, and just as much as you want, and no more; or it can be put on in an instant when wanted, and stopped in an instant when it is not wanted. Where the rate per kilowatt is furnished at a low rate, say five or ten cents, as it is in the cities, electrical heating may be cheaper than wood, coal, kerosene, gas, or gasoline, just because you can have just so much of it and just where you want it, and no more, none going to waste.

have to haul their grain to the top of the great hill; and farmers just now do not have a surplus of time nor of horses either, as a rule. Shall they climb uphill, leave their grist, and then again come up after it? or shall a wire bring the power to the home or even down to the valley? I have taken space to make the above statement in order that you may get a fair glimpse of the problem that awaits us in making the wind store the electricity, or "canned electricity," as the *Scientific American* terms it.

Well, one reason why I was anxious to have friend Forrest go along was because he is so much younger than I. I thought he might take me along and keep me out of trouble. When we arrived at St. Paul, the man who had charge of the information bureau was looked up. There were many people around asking him questions, and I guess he was tired. He said we could not get a train for Wyndmere nor anywhere near it until some time next day. Well, Mrs. Forrest not only runs an electric automobile but when we planned our trip she traced our route by railroad folders and told us we could get to Wyndmere early the following morning. I went back to the "information" man; but he was short and crusty, and intimated that he knew his own business, etc. I went to the ticket agent and told him we had been informed we could get to Wahpeton that night. He said Wahpeton was away off our route, etc.—there was no way but to wait until the middle of the next day. But friend Forrest still insisted that his wife was right, and he seemed to think she knew more than the information bureau and the ticket agent together. As there were four or five clerks at the ticket-windows in St. Paul, I applied to their man at another window. He too snubbed me by intimating they knew their own business. Notwithstanding all this, Mr. Forrest pointed out by our folders that we were right; and I made the chap at the information bureau own up; and he gave as a reason that he had run out of folders for the train we wanted to take; and when I applied for a sleeper berth the same ticket agent again insisted that it would not do me any good to go to Wahpeton.

I give the above as an illustration of how important it is when we want to travel any long distance that we thoroly inform ourselves before starting as to the route to take, etc. My impression is that if they had had a woman in charge of that information bureau, or even at the ticket office, she would have been sufficiently posted to

save us a great part of a day besides the expense.

When I started from home Mrs. Root said, "Now, don't you go and burden George's wife with her two little children. I know about them, for I have seen their pictures. But you *insist* on going straight to a hotel."

Well, I tried to obey orders; but George and his good wife said, "*nothing of the sort.*"

As I was tired from the day's travels I was soon off to bed. Perhaps I should explain here that by some blunder our good friend Forrest did not get off the train at Wahpeton, but he arrived at George's place a little after I had retired, and he too tried to go to a hotel, but received the same answer I did. So, instead of obeying Mrs. Root's injunction I went there and stayed over night; and not only that, I brought another man with me and we both stayed over Sunday. Oh, dear me! didn't "*we three*" have a time in discussing windmills, storage batteries, electricity, etc.?

The town of Wyndmere has about 600 inhabitants, and it is lighted by an electric-light plant owned by the Electric Windmill corporation. A kerosene engine operates it. I think it requires toward \$2.00 worth of kerosene to run it 24 hours, and an expert to take charge of the engine in the night. But this expense could all be saved by electricity furnished by the windmill. George thinks about four mills located at the four corners of the town would do the work; and the reason why these windmills are not installed is that they are away behind on orders for the mills. They received three orders for outfits of \$500 each the day I arrived; and two days later they received five more orders for outfits. The factory is a one-story one, I think about 140 x 50 or 60 feet wide. Almost everything in that line is made on their own premises. The particular trouble just now is a lack of help. Some of their best men have been called to the war. From a notice I gave of their invention in GLEANINGS, inquiries have come from almost every part of the world. In fact, George showed me a pile of letters that were quite in evidence as showing that our journal reaches almost the uttermost parts of the earth. The Manikowske family are all geniuses. When George took us up to "the old home farm" we found his father and mother and sister and brother each driving a four-horse reaper; and a hired man drove the fifth, so that each time around the field they cut a swath as wide as the five reapers. Nothing would do but

that A. I. Root would have to mount a machine and drive the team once around the field, half a mile long on each side. George's mother volunteered to be my "chaperon" and see that I pulled the right levers and did not fall off. The sister wore while driving what I think they call "feminine overalls," and somebody told me that if any of the five reapers get out of commission the sister would diagnose the trouble, and many times remedy it quicker than anybody else.

Let me pause here to say that I did not suppose until this visit there was a place in the whole wide world where the most beautiful luxuriant wheatfields were covering acre after acre. In this part of North Dakota there are no fences. The crops come right up to the road, so there is but little chance for weeds. One farm joins another without fences so there are no fence corners where weeds can go to seed. This year they have had better crops than ever before, and North Dakota, so it seems to me, is better prepared to win the war by doing its part to *feed* the world than any other spot in the world. The ground is so level there that George says he has seen a furrow a mile long full of water after a big rain, and so level the water would not run either way, but stand still the entire length of the furrow. Cornfields that alternate the wheat are just as handsome as the wheatfields. In fact, I never before in my life saw miles and miles of cornfields without any poor spots—just a bright rich green; and the crops there are further along than they are here in the East. The war gardens too are just wonderful. The farms are all large; and with the outbuildings every farm makes almost a little village by itself. I think George told me there were 22 different buildings, big and little, on his father's farm. No wonder they are going in for windmills, electric lighting, etc. And it is not all lighting. They have electric motors on little trucks that they can haul around from one building to another; and by hitching on a wire they can turn a grindstone, cream-separator, icecream-freezer, fanning-mill, mill for grinding grain, cutting fodder, and no end of things. Of course, in many places they have stationary motors, where much power is required. These little motors can be used anywhere, doing the washing, churning, etc.

While out in the harvest field George's mother informed me that in the absence of herself and daughter they had two schoolgirls doing the housework, and she felt a little anxious about them. A little

later I met and became acquainted with the two. I think they were 13 and 15 years old respectively. One of them wore the feminine overalls somewhat abbreviated for a young girl, and they were doing all the housework, getting the meals, making the beds, and even making beautiful bread. In visiting another farm I met and was introduced to different members of the family. It was just at dusk, and they were congregated in and around a large automobile. After the farmer had introduced all the rest he made a remark something like this:

"I want you to shake hands with my hired man. He has been helping me a good many years, and he is the very best hired man I ever got hold of in my life."

Well, said hired man seemed to be a little shy about meeting strangers. In fact, I had to go clear around the machine to get a good view of him, as it was nearly dark. What do you think? It was a rather tall slim daughter of the old farmer, dressed in the feminine overalls as a matter of course. By the way, I think I have at different times made objection to women folks leaving off the skirts, but when it comes to doing farmwork, especially caring for modern machinery, skirts would certainly be very much out of place. A short skirt might be covered by overalls, but during hot weather such as we have been having this last week of July and first of August it certainly should be the privilege of the women and girls in the house to wear just as little clothing as is absolutely necessary for comfort and decency, exactly as your old friend A. I. Root does.

Well, after I got home I was telling my grown-up daughters how the girls and women in the great grain-growing regions of the Northwest were helping to win the war, and one of my daughters remarked:

"Father, if you were a younger man I might question the wisdom of sending you away off to see and become acquainted with the women folks in the harvest fields, especially the good-looking girls."

To this I replied:

"My dear child, it would be a perfectly safe thing for *any* man, of any age, to go anywhere in the world, providing said man has in his heart the beautiful text or prayer that has been my comfort and joy daily and I might almost say hourly, for many months past. Here is the text: 'Let the words of my mouth, and the meditation of my heart, be acceptable in thy

*Has it occurred to you dear reader that never before since the world began has women proved such a "help meet" to man, to the nation, and the world, as just now?

sight, O Lord, my strength and my redeemer."

I think those who have tried it, especially men folks, may have found that it is a comparatively easy thing to be careful of their *words*; but when it comes to keeping "the meditations of their heart" so that *they* will all be acceptable in the sight of the all-seeing God, then it comes to be a task; and at times it may seem to be a most hopeless task. But do not despair nor give up, dear brother or sister. As you look back you will see and feel you are making progress; and altho at times it seems as if the pinnacle would never be reached in one short human life, it is worth the trying; for among all the promises in God's holy word there is *one* that seems to me overtops them all; and when you get perfect control of your thoughts as well as of your words you will have in view the precious promise of the dear Savior, in one of the beatitudes—"Blessed are the pure in heart, for *they* shall see God."

(To be continued.)

FISH AS AN ARTICLE OF DIET: DOES THE SAVIOR INDORSE IT?

On page 410 of *Gleanings* for July, Dr. Miller kindly suggests that I am not careful enough in quoting scripture. While this may be true, and I promise to be more careful in the future, let me explain that I did not have in mind Luke 24:42. In the 21st chapter of John, verses 12 and 13, we read:

"Jesus saith unto them, come and dine. And none of the disciples durst ask him, Who art thou? knowing that it was the Lord."

"Jesus then cometh, and taketh bread, and giveth them, and fish likewise."

The above indicates without question, as it seems to me, that he provided a repast of bread and fish; and when he at another time performed the miracle of loaves and fishes, he gave them fish also. My opinion is, however, that he provided only the most common article of diet, or, in other words, such a meal as they were accustomed to; and I am not sure that he meant to indorse a meat diet by furnishing fish. On the other hand, it is quite true—that is, it so seems to me—that he did not consider fish diet in any way objectionable or unwholesome.

TOBACCO AMONG THE SOLDIERS IN THE ARMY: SOME FURTHER CONSIDERATIONS REGARDING THE MATTER.

I wonder how many of our readers take the monthly published at Battle Creek, Michigan, entitled *Good Health*. Each issue of late seems to be especially valuable; and after what I have said in regard to to-

bacco in the army in our two past issues, the following clipping fits in well, even if it does suggest that perhaps I have been thoughtless sometimes, and may have gone to too great an extreme. Here is the clipping:

Our war administrators are men of extraordinary ability, and are showing an amazing degree of efficiency and wisdom in the management of the greatest enterprise ever undertaken by any country. The advisability of including tobacco in the soldier's ration doubtless received careful consideration before the order was given, and the order must have been based upon the fact that 90 to 95 per cent of all the soldiers are smokers.

To deprive the smoker of tobacco, while at home everybody continues to smoke as much as he likes, would naturally tend to make the soldier discontented and unhappy because of the apparent discrimination against him. Hence it was doubtless regarded as expedient, under the circumstances, to give the soldier the same opportunity for indulging in his favorite dope as the tobacco addicts at home enjoy; and the most convenient way of doing this is doubtless the distribution of the drug as a part of the soldier's ration. But there is nothing in this action that in any way indorses the idea that tobacco-using is a good thing for anybody. It is simply a concession.

CIGARETTES—ARE THEY HARMFUL TO ADULTS—MEN AND WOMEN?

The letter on the first page of *Our Homes* of our last issue intimates, as I take it, that cigarettes are harmful only to boys and girls; but the clipping below, from the *Cleveland Plain Dealer*, does not quite seem to accord with that idea.

MAN CIGARETTE SUICIDE: KILLS HIMSELF BECAUSE HE CANNOT QUIT.

Redding, Cal., July 14.—Because he could not stop smoking cigarettes Charles M. Byers, a miner, walked out to the county cemetery and fired a bullet thru his brain.

"Bury me in here," instructed a note found in his clothing. "I have tried again and again to stop smoking cigarettes. I cannot do it."

Byers was 50.

WHAT A LITTLE TRACT MAY DO.

The Asher Publishing Co., 359 Minnesota St., St. Paul, Minn., sends out a printed list of religious tracts and temperance leaflets. These tracts are offered at the very low price of from two cents a dozen up to two cents each; and this latter price sometimes includes quite a little book for a small sum of money. Among others is the *Dairyman's Daughter* for two cents. Well, their list of tracts, big and little, comprises several hundred titles. On the last page is something that gave me one of my happy surprises. It is this:

"A woman dropped a tract in the way of Richard Baxter which led to his conversion. Richard Baxter wrote 'The Call to the Unconverted,' which was the means of bringing a multitude to God, among others Philip Doddridge. Philip Doddridge wrote 'The Rise and Progress of Religion in the Soul,' which brought thousands into the kingdom; and among others the great Willerforce. Willerforce wrote 'A Practical View of Christianity,' which was the means of bringing many to Christ, among others Leigh Richmond. Leigh Richmond wrote 'The Dairyman's Daughter,' which has been the means of converting many."

Is not this wonderful, friends, that just one seemingly insignificant slip of paper should start a ball rolling down the ages that shall not only "save a multitude of souls," but perhaps make a marked change in the literature of the whole wide world? Send a stamp to the Asher Publishing Co. and get their price list.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeier & Arpe Co., 139 Franklin St., New York.

FOR SALE.—Well ripened clover honey in 60-lb. cans, also buckwheat in kegs. Any amount up to carload. E. L. Lane, Trumansburg, N. Y.

FOR SALE.—To the highest bidder, my crop of white clover extracted honey, from 300 colonies bees. Purchaser to furnish containers.

L. S. Griggs, 711 Avon St., Flint, Mich.

FOR SALE.—Our new crop honey, clover-bass-wood, blended by the bees on the hives. One of the best lots on the market. It is packed in new 60-lb. tin cans, two to the case. Sample 25c to be deducted from first order.

D. R. Townsend, Northstar, Mich.

HONEY AND WAX WANTED

Small lots of off-grade honey for baking purposes. C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

Comb honey wanted, address 153 Box 323, White Plains, N. Y.

WANTED.—Comb and extracted honey. Penn Co., Penn. Miss.

Cash at your bank for carlots and less of comb and extracted honey. Wesley Foster, Boulder, Colo.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares. Superior Honey Co., Ogden, Utah.

WANTED.—Light extracted honey, state price f. o. b. your station. I. J. Stringham, Glen Cove, N. Y.

WANTED.—Comb and extracted honey, car lots and less. Mail sample, quantity and price. W. Morris, Yonkers, N. Y.

WANTED.—Extracted and comb honey. Carload or less quantities. State particulars by mail and sample of extracted. Hoffman & Hauck, Inc., Richmond Hill, N. Y.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

We are in the market for honey and beeswax. Send your best price on comb honey and a sample of extracted honey. State quantities you have, also style, size, and weight of package or section. Charles Israel Bros. Co., Inc., 486-490 Canal St., New York City.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

WANTED.—Beeswax. We will pay for average quality beeswax delivered at Medina, 36c cash, 38c trade. We will pay 1 to 2c extra for choice yellow. Be sure your shipment bears your name and address as shipper so we can identify it on arrival. The A. I. Root Co., Medina, Ohio.

WANTED.—Extracted honey, all kinds and grades for export purposes. Any quantity. Please send samples and quotations.

M. Betancourt, 59 Pearl St., New York City.

FOR SALE

HONEY LABELS.—Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Conn.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

SEND TODAY for samples of latest honey labels. Liberty Pub. Co., Sta. D, Box 4E, Cleveland, Ohio.

FOR SALE.—Golden seal seed, \$1.00 per thousand. S. Pitts, Stronghurst, Ills.

FOR SALE.—300 boxes extra good second-hand cans at 65c per box of two cans. Manley Bros., Sandusky, Mich.

Beekeepers, let us send you our catalog of hives, smokers, foundations, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

FOR SALE.—One Peterson capping melter with table and separating can complete; practically new, \$12.00. E. G. Carr, New Egypt, N. J.

My entire bee and queen business for sale at once. If interested apply to M. Bates, Greenville, Ala., R. D. No. 4.

FOR SALE.—20 new ten-frame Colorado covers, smokers, extractor, supers. S. K. Blundin, Oxford Valley, Pa.

FOR SALE.—Hand-gathered sweet clover seed now ready. Write for prices. E. C. Bird, Boulder, Colo.

Pennsylvania Distributors for Root Bee Supplies, save time and transportation expense on all standard hives, sections, etc., at catalog prices. Prothero, Bailey & Goodwin, Dubois, Pa.

FOR SALE.—Good second-hand 60-lb. cans, two to the case, at 60c per case f. o. b. Cincinnati. Terms, cash with order. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, Ohio.

\$5.00 A DAY GATHERING EVERGREENS, ROOTS and Herbs. Ginseng, \$14 a lb., Belladonna Seed, \$64 a lb. or grow it yourself. Book and war prices free. Botannical 18, New Haven, Conn.

CANADIAN BEE SUPPLY & HONEY CO., Ltd.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—All or part interest in a well-established queen-rearing business. Scarcity of help reason for selling. Can not keep up with what help I have left. 16 miles from Corpus Christi (The Naples of the Gulf) high healthy location. A good proposition for the right party with small amount of capital. Reference furnished. Nueces County Apiaries, Calallen, Texas.

WANTS AND EXCHANGE

Bees in exchange for good So. Florida farm land. Fine location for bees, over 10,000 acres in oranges. A. L. Hefinger, 1532 Olivewood Ave., Lakewood, O.

WANTED.—Second-hand extractors. What have you and price. Bee supplies and honey. W. D. Soper, Jackson, Mich.

WANTED.—A good honey location to start a line of apiaries. Will give suitable reward for the best reliable information. D. E. Lhommedieu, Colo, Iowa.

WANTED—Hand extractor. Must be in working order. State price.

C. Miller, Broad Brook, R. F. D. Conn.

WANTED.—A Novice or Cowan two-frame honey extractor. State price.

C. P. Schmidt, 67 Plum St., Detroit, Mich.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

REAL ESTATE

A small California farm earns more money with less work. Raise the crops you know about—alfalfa, wheat, barley, etc.—also oranges, grapes, olives, and figs. Ideal for dairying, pigs, and chickens. No cold weather; rich soil; low prices; easy terms; good roads, schools and churches. Enjoy life here. New comers welcome. Write for our San Joaquin Valley, also Dairying and Poultry Raising illustrated folders free. C. L. Seagraves, Ind. Com. A. T. & S. F. Ry., 1927 Railway Exchange, Chicago.

BEAUTIFUL HOME FARM, improved rich soil, well located, good buildings, 100 colonies of bees, up to date; best honey-producing location in the State; not crowded; average for past 7 years, 105 lbs., 5 acres of ginseng and goldenseal, all ages, in fine shape; half artificial shade, half natural. Will sell a part or all of seng-seal. 80-acre farm, \$80.00 per acre; \$7,000 for farm and bees, 150 extracting supers and combs, 150 shallow supers, 2-frame extractor, 2 large honey tanks. Terms, \$3,000 cash, balance time. A wonderful opportunity—a bargain. Reason for selling, poor health.

W. M. Penrod, Ronneby, Minn.

BEEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, R. D. No. 3, Vincennes, Ind.

Try Phelps' Golden queens and be convinced, \$1.00 each. C. W. Phelps, Binghamton, N. Y.

FOR SALE.—Untested Golden Italian queens, 65c each. J. F. Michael, Winchester, Ind.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Courtland St., New York.

Improved queens. All select. Get circular. J. E. Jordan, Morgan, Ky.

Golden Italian queens, untested, \$1.00 each, six for \$5.00. E. A. Simmons, Greenville, Ala.

When it's GOLDEN it's PHELPS. Queens, \$1.00. C. W. Phelps & Son, Binghamton, N. Y.

"SHE SUIT ME" Italian queens; \$1.00 from May 15th to Oct. 15th.

Allan Latham, Norwichtown, Conn.

FOR SALE.—October 1, 100 colonies, eight frame hives, wired foundation, no supers, \$6.00 per colony. L. R. Dockery, Hagerman, Ida.

Three band Italian queens, untested, \$1.00; select untested, \$1.25; tested, \$1.50; select tested, \$2.25. H. W. Fulmer, Box G, Point Pleasant, Pa.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey gatherers as can be found; each \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

J. B. Brockwell, Barnetts, Va.

PHILIPS queens will please you, \$1.00. C. W. Phelps & Sons, Binghamton, N. Y.

300 tested Italian queens for sale, at 80c each in lots of 6 or more.

Fred Leininger & Son, DePhos, Ohio.

Italian queens, the HONEY GATHERERS. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

Hardy Italian queens. The busy kind, no culls. Must please. \$1.00 each.

W. G. Lauver, Middletown, R. D. 3, Pa.

FOR SALE.—Three-band Italian queens, Untested, \$1.00; 6, \$5.00; 12, \$9.00. Tested queens, \$1.50 each. Robt. B. Spicer, Wharton, N. J.

Finest Italian queens, \$1.00 each; 6 for \$5.00. My methods free. J. W. Romberger, 3113 Locust St., St. Joseph, Mo.

FOR SALE.—Fine Italian queens, 75c each, \$8.00 per dozen. Safe arrival guaranteed.

F. J. Talley, Greenville, Ala., Rt. No. 3.

FOR SALE.—50 colonies of bees in 8-frame hives. No disease.

O. A. Dugstad, Spring Valley, R. D. No. 4, Minn.

Tested leather-colored queens, \$2.00; after June 1, \$1.50; untested, \$1.00; \$10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

FOR SALE.—Three-handed Italian queens, safe arrival guaranteed. Write for prices. J. A. Jones & Son, Hope Hull, Montgomery Co., Ala.

THREE-BAND ITALIANS ONLY. Untested queens, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50. H. G. Dunn, The Willows, San Jose, Calif.

Three-handed Italian queens at Shenandoah Apiary, ready May 15. Tested, \$1.25; untested, \$1.00; dozen, \$8.00.

S. Click, Box 16, Rt. 2, Mt. Jackson, Va.

Bright Italian queens, ready April 15th, \$1.00 each. Safe arrival guaranteed. Write for prices of larger quantities.

W. W. Talley, Greenville, Ala., Rt. 4.

GOLDENS THAT ARE TRUE TO NAME. Untested queens, each, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50.

Garden City Apiaries, San Jose, Calif.

Italian queens. Golden and 3-banded bred from best selected stock. Untested, each, 65c; 6, \$3.75; 12, \$7.00. Select untested, 75c each. Satisfaction guaranteed. G. H. Merrill, Liberty, S. C.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1; 6 for \$5. Wm. S. Barnett, Barnetts, Va.

FOR SALE.—Golden Italian queens of an improved strain; the bees for honey, hardiness, gentleness, and beauty. Untested, \$1.00; tested, \$2.00. Wallace R. Beaver, Lincoln, Ill.

FOR SALE.—9 colonies of bees in new nailed hives, wired full sheets of foundation, \$6.00 each. Am leaving Missouri. M. E. Baker, 5729 Eichelberger St., St. Louis, Mo.

ITALIAN QUEENS.—The best I have ever had; untested each \$1; five, \$4.50; ten, \$8; twenty, \$15; fifty, \$35; 100 for \$60. Delivery beginning in June. Orders filled on time and safe arrival guaranteed. J. B. Hollopeter, Queen Breeder, Rockton, Pa.

Golden Italian queens that produce gentle and good honey-gathering bees. No foul brood. Select tested, \$1.25; tested, \$1.00; untested, 75c; 6, \$4.25; 12, \$8.00. No nuclei or bees for sale.

D. T. Gaster, Randleman, N. C., R. D. No. 2.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, \$1.00, 6, \$5.00; tested, \$3.00; breeders, \$5.00 and \$10.00.
C. W. Phelps & Sons, Wilcox St., Binghamton, N. Y.

Golden Italian queens that produce gentle and good honey-gathering bees. My bees were prize winners at Illinois State Fair. Mated, untested, \$1.00; select untested, \$1.25; tested, \$2.00. No bees for sale.
A. O. Heinzel, Lincoln, Ills.

Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolans. Tested, \$1.00 each; untested 75 cts. each. Bees per lb., \$1.50; nuclei, per frame, \$1.50. Send your order for bees early.
C. B. Bankston & Co., Buffalo, Leon Co., Tex.

FOR SALE.—Cheap, 125 colonies, clean bees. Abundance of supers and extracting equipment. Fireweed, wild blackberry and maple. Good exclusive territory. Good road, hunting, fishing, fine water. Room for more bees.
G. L. Welch, Potlatch, Wash.

FOR SALE.—100 to 300 colonies of bees in 8-frame dovetailed hives, Hoffman wired frames, 3 comb supers around, in two best locations in Valley. Two good honey houses. \$8.00 each. No disease. M. W. Harvey, Reno, R. D. No. 1, Box No. 45, Nev.

PURE ITALIAN QUEENS. Goldens that are GOLDEN and Doolittle's choice stock. Select untested (laying queens), one, \$1.00; 6, \$5.00; tested, \$1.50; best breeders, \$5.00. For large lots write for prices. Pure mating, safe arrival and satisfaction I guarantee.
J. E. Wing, 155 Schiele Ave., San Jose, Calif.

ITALIAN QUEENS.—Northern-bred three-banded, highest grade, select untested, guaranteed, queen and drone mothers are chosen from colonies noted for honey production, hardiness, prolificness, gentleness and perfect markings. Price, 1, \$1.00; 12, \$10.00; 50, \$35.00. Send for circular.
J. H. Haughey, Berrien Springs, Mich.

North Carolina bred Italian queens of Dr. C. C. Miller's famous strain of three-band Italian bees, gentle and good honey-gatherers. July 1 until Oct. 1 untested, 85c each, 12 for \$9.00; tested, \$1.25 each; select tested \$1.75 each. Safe arrival and satisfaction guaranteed.
L. Parker, Benson, N. C., R. F. D. No. 2.

FOR SALE.—Achor's Pure Italian Queens, hardy and prolific. No disease. Satisfaction guaranteed. Before June 16, untested, 1 for 90c; 12 for \$10.00; tested, 1 for \$1.50; 12 for \$16.50. After June 16, untested, 1 for 75c; 6 for \$4.25; 12 for \$8.00; 50 or more, 65c each; tested, 1 for \$1.25; 6 for \$7.00. Best breeder, \$3.00.
W. D. Achor, Fitzpatrick, Ala.

Fine queens of Dr. Miller and Walker's stock, \$1.00 each, 6 for \$5.00; 12 for \$9.00, 100 for \$75.00.

Testimony of Mr. J. M. Meadow, Dorton, Tenn. "I have in my yard queens from four different breeders. Walker's beats them all."

Testimony of Mr. A. K. Whidden, San Jacinto, Cal., Bee Inspector of Riverside Co., "I have just inspected an apiary for Roy Bateman. They were requeened with your queens. The superiority of those queens was so marked that I want 100 or more." Curd Walker, Queen-breeder, Jellico, Tenn.

BREEDING QUEENS.—We are now doing our annual requeening. Our bees are of the celebrated Moore strain of leather-colored Italians. Gentle, hardy and great workers. I have decided to select the best one-year-old queens, tested for purity of mating, gentleness and working qualities of the bees, queens good enough to use for breeders, and offer them for sale for \$1.50 each; 6 for \$8.50; 12 for \$16.50. Untested queens of same stock for \$1.00 each, 6 for \$5.00, 12 for \$11.00. Safe arrival and satisfaction guaranteed.
Elmer Hutchinson, Lake City, Mich.

SITUATIONS WANTED

Position wanted in apiary by experienced apiarist. Hungarian, speaks little English; 50 years old, robust and good worker. For further particulars address John Duka, c/o Hutter, 23 Bostwick Ave., Detroit, Mich.

HELP WANTED

WANTED.—Young men of energy and character, of clean habits, not eligible for military duty, as helpers in our extensive bee-business. Fine chance to learn. Write immediately, giving wages, age, height, weight, experience, and references all in first letter, or expect no answer.

E. F. Atwater, Meridian, Idaho.

Perdue's Southern-bred Italian Queens

that resist disease well — those that resist disease must be hardy, prolific, and hustlers; and they are superior to many as honey-gatherers, and mated for their gentleness. Why not try them and be convinced that you have been losing by not buying them the three bands.

Untested,	one,	\$.75;	six,	\$4.25;	12,	\$8.00;	per 100,	\$60.00
Sel. Untested,		1.00		5.00		9.00		
Tested,		1.50		8.75		17.00		

Satisfaction guaranteed

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will find a complete line of supplies here. Order early and avoid delays. Write for catalog.

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Queens Rhode Island Queens

Italian Northern Bred Queens. Very gentle and hardy. Great workers. Untested, \$1; 6 for \$5. Circular on application. Queens delivered after June 1.

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56 Lawrence Street.

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remember we carry a full stock and sell at the lowest catalog price. Two lines of railroad—Maine Central and Grand Trunk. Prompt service and no trucking bills.

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J. B. MASON, Manager.

L. L. FOREHAND - - FORT DEPOSIT, ALABAMA

BOOKS AND BULLETINS

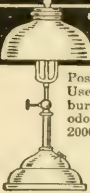
"Report of Iowa State Apiarist for 1917," by F. Eric Millen. The report of the State Apiarist of Iowa contains nearly 100 pages of live interest to beekeepers. In addition to demonstrations and regular inspection work, Mr. Millen has charge of a week's short course in beekeeping at the State college at Ames, and also of a correspondence course in beekeeping. Most of the booklet is taken up with a report of the Iowa Beekeepers' Association, which has enrolled about 300 members. Fourteen very good papers were given among which are such practical subjects as "What the Beekeeper Throws Away," "Beekeeping in War Times," "Painted vs. Non-Painted Comb Foundation," and other articles of a more scientific nature, such as "Points of Interest in the Anatomy of the Honey Bee," and "The Mechanism Which Determines Sex in the Honey Bee." The report is well worth reading. It may be obtained (we believe) by addressing F. Eric Millen, State Apiarist, Ames, Ia.

"Every-day Essentials of Beekeeping," Bulletin No. 14, Apiary Inspection Dept. of State Board of Agriculture of Massachusetts, by Burton N. Gates. Within a space of 32 pages Dr. Gates "presents some essentials adapted to the beginner" or amateur. This bulletin seeks primarily to promote efficiency among beekeepers, and is one that any amateur beekeeper or beginner (especially if living in New England) would do well to ask for. Dr. Gates is also author of the eighth annual report of the State Inspector of Apiaries of Massachusetts, very recently off the press—and an interesting one.

"Control of European Foul Brood," Farmers' Bulletin 975, by Dr. E. F. Phillips. This is a popular treatment of the subject. In it the symptoms are given as quite variable, and the disease is, therefore (aside from a bacteriological examination), very difficult of accurate diagnosis. Eleven characteristics are enumerated. These, when present, are of help in determining the disease. Dr. Phillips calls attention to the fact that European foul brood is a disease of weak colonies. The earliest brood of the year usually escapes with little loss, yet the disease is especially prevalent in the spring and early summer, usually disappearing at the beginning of the honey flow. Altho the method of spreading the disease is not well understood, the disease is sometimes carried thru feeding, and there is also evidence that the disease is carried by the nurse bees. Three remedies for this disease are suggested. (1) dequeening and requeening with good stock as soon as the dead larvæ are removed, or even sooner if the colony is strong; (2) at least half of the strong colonies shaken onto combs, and the brood tiered upon the weaker colonies until they are strong enough for treating; (3) above the lower story is placed the brood-combs, and below is placed the queen, one frame of brood, and the remainder of the hive filled with foundation or drawn combs. Of the first two which have been commonly used, the second has the advantage of losing no time in the brood-rearing. The third method is of interest inasmuch as it does not, during the treatment, provide any time in which nurse bees cannot have access to the young diseased larvæ. If the disease is carried by nurse bees, as suggested, one might naturally suppose that as soon as young brood appeared in the lower hive the nurse bees would be able to feed them infected juices, and thus continue the disease.

"The Segmentation of the Abdomen of the Honeybee." We have received from Dr. Jas. A. Nelson an interesting paper on the number of segments found in the abdomen of the honeybee. Dr. Nelson is the author of "The Embryology of the Honeybee," and contributed to the last edition of the A B C

(Continued on page 571.)



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Positively the cheapest and strongest light on earth. Used in every country on the globe. Makes and burns its own gas. Casts no shadows. Clean and odorless. Absolutely safe. Over 250 styles. 100 to 2000 Candle Power. Fully Guaranteed. Write for catalog. AGENTS WANTED EVERYWHERE.

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New England Beekeepers

EVERY THING IN SUPPLIES

New Goods Factory Prices Save Freight

Cull & Williams Co., Providence, R. I.

Don't Lose Any More Wax

Beekeepers: Let us print you some cloth or manilla tags to go on your shipments of wax with your name and address. That is the only safe way to be sure your wax isn't lost in transit.

Prices on Application.

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Dr. Miller QUEENS

We are again rearing queens from mothers supplied by Dr. Miller from his apiary. These bees are proving to be very gentle as well as hardy and resistant to Foul Brood. Two queen-breeders not interested in us at all have declared them to be the gentlest bees they ever saw. Our list of customers that demand Miller Strain is growing fast. Remember that we are the only breeders that get breeders direct from Dr. Miller. Can you find a man more able than Dr. Miller to select your breeding queens? Besides that he has the material that he has been working on for over fifty years to select from. Safe arrival and satisfaction guaranteed.

One untested, \$1.00; 12 for \$10; 25 or more, 75c each.

The Stover Apiaries

Penn, Miss.

Formerly of Mayhew, Miss.

COMB HONEY SHIPPING-CASES

Our shipping-cases are all accurately made of nice basswood lumber. This makes a very attractive, neat, and strong package.

Send for our catalog.

August Lotz Company, Boyd, Wisconsin

QUEENS

Bred for Honey Production

That are gentle and hardy. Reared from the best mothers by the best known methods. We will have 2000 mating nuclei in operation by June 15th.

We may have some pound packages to offer after June 15th but are not in position to say until about June 10th to 15th. Safe arrival and satisfaction guaranteed.

One untested, 75c each; 12 to 100, 60c each. Full colony in 8-fr. hive with tested queen, \$9.00; 10-fr. hive, \$10.00. Can make prompt shipment of these.

The Penn Company
Penn, Lowndes Co., Miss.

Beekeepers' Associations. . . .

Often need their reports and bulletins printed. We are in the market for this work. Our complete stock of cuts and illustrations are at your disposal. We can often save you the expense of new cuts. Let us quote you on your printing—reports, stationery, cartoons, advertising matter, labels, etc.

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Publishers of *Gleanings in Bee Culture*

Honey Cans

(Several Carloads now on hand)

Superior Foundation Honey Extractors

Everything in Bee Supplies

For Quick Shipments
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Full Values in "falcon" Beekeepers' Supplies

For the last forty years during our manufacture of "FALCON" supplies it has been our endeavor to place upon the market the best possible line of supplies. And we pride ourselves in having accomplished this. "FALCON" supplies have not only been recognized as the best in this country, but also a leader in other countries. Nothing expresses the superiority of the "FALCON" ware better than the many kind and pleasing words we receive from our satisfied customers, and the ever-increasing demand for "FALCON" supplies.

The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid

Dealers Everywhere

"Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from

Books and Bulletins - Continued

of Bee Culture an article on the development of this insect. An examination of the abdomen of the worker bee shows that it apparently consists of six rings or segments. The head and thorax are also composed of segments, but in the head they have become so closely fused together that the individual segments can no longer be easily distinguished. The insect is thus a cylinder composed of rings or segments. But in the embryo the segments still remain distinct, and there is no differentiation into head, thoracic, or abdominal regions. There has been in the past more or less difference of opinion as to the number of segments which enter into the formation of the head and abdomen. The trunk of the insect was by the earlier workers in this field regarded as consisting of 10, or, in some cases, of 11 segments. From his studies of the embryos of the honeybee Dr. Nelson finds plain evidence of the presence of 12 segments in the abdomen. This valuable paper is published in the Annals of the Entomological Society of America, Vol. XI, pp. 1-8.

"Mysteries of Beekeeping Explained," by Quinby. Quinby has long been recognized as such an authority on beekeeping, and his books in such demand, that The A. I. Root Company has found it necessary to publish recently an eighth edition. The subjects treated are: "The Natural History of Bees"; "Directions for Obtaining the Greatest Amount of Pure Surplus"; "Honey with the Least Possible Expense"; "Remedies for Losses Given"; "The Science of 'Luck' Fully Illustrated." The book is the result of more than 30 years' experience in extensive apiaries. Those wishing to purchase the book may obtain it from The A. I. Root Company.

"The New Zealand Co-operative Honey Producers' Assn., Ltd." According to a leaflet put out by the New Zealand Co-operative Honey Producers' Association, this concern received honey from share-holders only, each of whom is required to take up shares on the basis of his average crop. The association was organized in order to regulate the supply to the demand, and enable the beekeeper to get a fairer return for his produce. Since organizing, the association has caused a great increase in local as well as export trade, and has increased from 20 beekeepers to a large organization, with shareholders all over the Dominion.

Queens of MOORE'S STRAIN of Italians

PRODUCE WORKERS

That fill the super quick
With honey nice and thick

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Untested queens, \$1.00; six, \$5.50; 12, \$10.00. Select untested, \$1.25; six, \$6.50; 12, \$12.00. Safe arrival and satisfaction guaranteed. Circular free.

J. P. MOORE,
Route 1, Morgan, Ky.

Queen-breeder

"Best" Hand Lantern

A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc., needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog.

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These Len-Mort Work and Outdoor Shoes are such wonderful value that we will gladly send them to you prepaid, no money down. You will find them so well-made and so stylish and such a big money saving bargain that you will surely keep them. No need to pay higher prices when you can buy direct from us. Why pay \$5 and \$6 for shoes not near so good?

Great Shoe Offer



This shoe is built to meet the demand of an outdoor city workers' shoe as well as for the modern farmer. Built on stylish lace Blucher last. Special tanning process makes the leather proof against the acid in milk, manure, soil, gasoline, etc. They outwear 3 ordinary pairs of shoes. Very flexible, soft and easy on the feet. Made by a special process which leaves all the "life" in the leather and gives it wonderful wear-resisting quality. Double leather soles and heels. Dirt and water-proof tongue. Heavy chrome leather tops. Just slip them on and see how they are not the most comfortable, easiest, most wonderful shoes you ever wore. Pay only \$3.85 on arrival. If after careful examination you don't find them all you expect, send them back and we will return your money.

SEND your name and address; and be sure to state size you want. Send no money. Price only \$3.85 on arrival. We send these splendid shoes PREPAID. You are to be the judge of quality, style and value. Keep them only if satisfactory in every way. Return to give size and width. Send now.

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in Carlots and less
than Carlots. . . .

Correspondence Solicited

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Morristown, Tennessee

Mott's Northern-bred Italian Queens

are hardy, prolific, gentle, and hustlers,
therefore resist well disease.

Untested, \$1.00 each; \$9.00 for 12

Select Tested, \$1.50 each.

Virgins, 50c each; or three for \$1.00.

Bees by pound.

Plans "How to Introduce Queens," and
"Increase," 25c. List free.

E. E. Mott, Glenwood, Mich.

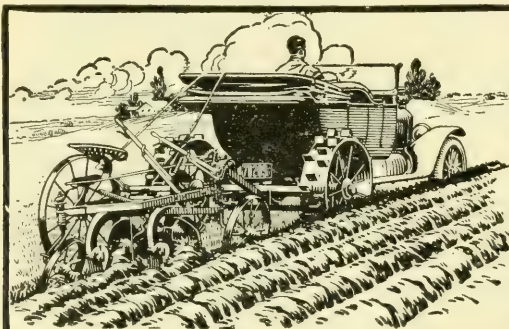
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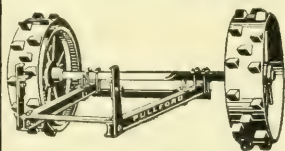
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With **FORD** Or Most
Your **Pullford \$155** Other Cars
F. O. B. Quincy, Ill.

MAKES a practical tractor
out of a Ford or most any
other car. Easily attached to or
removed from the car in thirty
minutes. No holes to drill, no
springs to remove. **Practical,
Durable, Reliable.**



New FAN DEVICE Prevents Heating

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and Enthusiastic Owners

Pulls plows, harrows, drills, mowers, binders, hay loaders,
road graders, wagons, trucks, etc. Steel wheels with roller
bearings and tires 10 inches wide, two pairs of hardened
Vanadium steel pinions, one for plowing and one for haul-
ing speed. A tractor with the reliability and durability of the
Ford car. Prompt shipment. Write for catalog.

It was the Pullford attached to Ford cars pulling two 12-inch plows
running on Kerosene, equipped with new fan device, that made a most
successful demonstration at Fremont, Nebraska.



PULLFORD COMPANY, Box 23C

Telephone No. 84

Walton Heights, QUINCY, ILLINOIS

AROUND THE OFFICE

M.-A.-O.

The awful hot weather just now and the plague of moskeeters and squash-vine wilt that has lit down onto Medina seems to have been influencin' me to compose just sober, high-class readin' matter. Praps I am not very well. Anyhow, I am goin' to give just this glimpse of "Uncle Amos"—and that's sure to be nothin' but good. There was a meetin' and supper of all the Roots' foremen and heads of departments in the company's factory lunch room last evenin'. I got in on a squeeze and A. I. Root got in complimentary, I suppose. He's got some rights here yet, anyhow, and got in on the feed and seemed happy about it. When the talkin' time came, "Uncle Amos" was called up early, and got onto his feet smilin' and smilin' midst a roar of hand clappin'. His smile is a real smile, too—a boy's sort of smile. It ain't 79 years old like his pedigree age. He reminisced a bit about the early days of the Root business when he carried the load alone onto his own shoulders and told of a recent trip west. Then suddenly the smile on his face sobered up a little bit—just a little, tho—and then he said somethin' like this: "But I am growin' old, and I am happy in growin' old, too. So I want to say somethin' here now that I want you boys all to remember long after I am gone, and remember your old friend, A. I. Root, said it to you and begged you to remember it. Some way, today I have been thinkin' about and repeatin' over and over that verse in the Bible that reads 'Let the words of my mouth and the meditation of my heart be acceptable in thy sight, O Lord, my strength and my redeemer.' I have got so the words of my mouth are pretty well guarded," he went on, "but the hard, hard battle is to keep the meditation of the heart right. So it must be with us all; but how grand a thing it is to keep our meditations right with the Lord. Let's never give up tryin'." Then "Uncle Amos" sot down amid another outburst of hand claps. It struck me all of a heap that we had just had a whole summin' up of A. I. Root in that speech that began with a talk about work and money-makin' and a trip to new fields in Dakota, and then closin' with a exhortation about what he thought was most important of all—a feller's heart and soul. A. I. Root's for business and he's also for heaven, so he is.

Probably E. R. Root and Dr. E. F. Phillips won't concede it's any of my particular business, but I ain't carin' and am goin' to mention it just the same. Those two fellers were at a Courtland County, N. Y., beekeepers' field meet the other day, kind of bumptious-like, as I spose they have a right to be at such meetin's seein' as how they know so much beekeepin'. It was of a Mon-

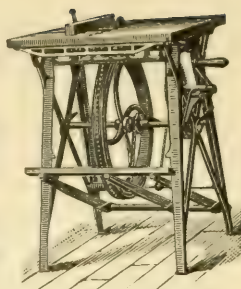
BARNES' Hand and Foot Power Machinery

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices

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BUILD UP A SURPLUS FUND

Present day conditions emphasize very strongly the importance—indeed the necessity—of everyone building up a surplus fund of ready cash.

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Deposits may be safely sent in the form of check, draft, money order or the currency by registered mail.

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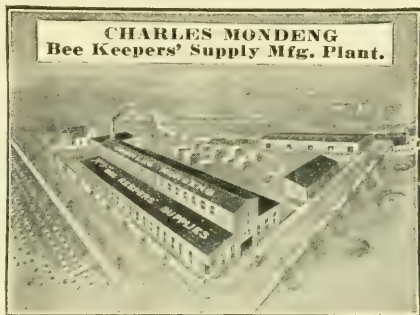
THE SAVINGS DEPOSIT BANK CO. MEDINA, OHIO

A. T. SPITZER, Pres.
E. R. ROOT, Vice-Pres.
E. B. SPITZER, Cashier

ASSETS OVER ONE MILLION DOLLARS

"Special Crops" A high-class illustrated monthly journal devoted to the Growing and Marketing of Ginseng, Golden Seal, Senega Root, Belladonna, and other unusual crops. \$1.00 per year. Sample copy 10c. Address
Special Crops, Box G, Skaneateles, New York

\$30,000 WORTH OF Bee Supplies



All boxed ready to ship at once; 275,000 Hoffman frames, also Jumbo and Shallow frames, of all kinds, 100 and 200 in a box. Big stock of Sections, and fine polished Dovetailed Hives and Supers. I can give you big bargains. Send for a new price-list. I can save you money.

Will Take Beeswax in Trade at Highest Market Price.

Charles Mondeng

146 Newton Ave., N. Minneapolis, Minn.

Around the Office—Continued

day, and E. R. was a-goin' it and seemin'ly unconscious got to tellin' about visitin' and lookin' over somebody's apiaries just the day afore. Dr. Phillips thought he see a openin' agin the editor of the Sunday-observin' Gleanin' and he up an says: "E. R., do you mean that was yesterday or Saturday you done that?" The snicker was on E. R.; but it seems he meant somethin' about Dr. Phillips' own personal Sunday habits when he right up and says: "Well, anyway, I got Dr. Phillips to go to church yesterday and he got by without dyin' of heart failure or shock, either." I, myself, think "Uncle Amos" ought to have a little quiet talk with both those boys. Any way, they oughtn'ter get to twittin' on facts in public. Facts is what gives a feller away oftener 'n anything else all put together most generally—and all to oncet sometimes, too.

* * *

Here's a feller worse degraded almost than M.-A.-O. was afore he got reformed. He's a Kalamazoo, Mich., man, and he even pays money to say words as what he oughtn'ter. I want all those particular good folks who used to peel M.-A.-O. alive afore he got reformed to go right after him and take his skin off while he's still livin' and hurts most. So they can know him and for what to pile onto him for, I am regretfully compelled to reprint the advertisement he put in a Kalamazoo paper the other day as follows, to-wit: "Notice—Whoever borrowed my jack screw, please return it, by gosh. Willie Lawrence." Think of that! That doesn't now seem to me possible, but it's all too true, I'm afraid. So, you human hide peelers, pile on to Willie, and reform him the way you did me. Don't leave a inch of

THAT GOOD QUEEN

in your colony that is two years old. Are you going to try her another year? Are you going to gamble on our next Spring crop? Probably she has kept your colony booming for two years. If she hasn't you don't want her. If she has DON'T keep her. Why? Because she has "exhausted herself." She is no longer a young queen. Next spring she will fail you. Your colony will be weak. And in the spring rush the flow will be over before you can get another. Don't risk your 1919 crop for the sake of 75c. Why not requeen this fall with

FOREHAND'S THREE-BANDS---the thrifty kind

and be sure of your next spring crop. Over a quarter of a century of select breeding brings them up to a standard SURPASSED BY NONE BUT SUPERIOR TO MANY. We guarantee pure mating, safe arrival, and perfect satisfaction.

	one	six	twelve
Untested	\$.75	\$ 4.25	\$ 8.00
Select Untested	1.00	5.00	9.00
Tested	1.50	8.75	17.00
Select Tested	2.00	11.00	20.00

Write for circular.

W. J. FOREHAND & SONS, Fort Deposit, Alabama

Around the Office—Continued

skin on such a son of Satan as he sure is.

* * *

Chalon Fowls, over at Oberlin, O., is a good beekeeper and sort o' soft at the heart, too. So a lot of beginners go to him to get started goin' right. One of these pulled up at his house the other day and wanted to get five bee-escapes, altho this beginner has only one colony of bees. Mr. Fowls asked why he wanted so many. "Oh," said he, "I put about five of 'em into one escape board and the bees get out just so much faster." Still Mr. Fowls couldn't see why and asked some more questions. Then it showed up that this beginner feller fitted five or six escapes into one escape-board, put it on the ground and then put the super on top of it there. "Why not leave the super above the hive body, and just slip the escape-board between them?" persisted the Socrates-like Chalon Fowls. "Oh, my beginner's book tells me to take the escape board and put the super on top of it when I want to get the bees out. It don't say anything about puttin' it between the super and hive. So I do just as the book says." You old bee wiseakers will all be laughin' at this beginner. I ain't. Some first-class apicultural genius wrote that beginner's book. All of 'em know so much about bees and take for granted a beginner's knowin' so much that they shoot away over the mark and make things just as clear as mud to a beginner, so they do.

BEEKEEPERS' SUPPLIES

A Good Stock of the

Lewis Beeware

and

Comb Foundation

Is at your command at
factory prices.

Western Honey Producers
Sioux City, Iowa

We have a market for your honey and
beeswax.

Queens Hardy, Long-lived and Disease-resisting . . . Queens

22 Years of Select Breeding Gives Us Queens of Highest Quality;
Queens for Honey Production; Queens of Unusual Vitality.

"There are few queens their equal and none better."

WHAT BEES DO HEADED BY OUR QUEENS

"One swarm made 185 sections of honey and another 296 sections. I am well pleased."—MELVIN WYSONG, Kimmell, Ind.

"Your bees averaged 150 pounds of surplus honey each. I find them not only hustlers but gentle."—FRED H. MAY, Meredosia, Ill.

"I have tried queens from several different places and like yours best of all."—C. O. BOARD, Alabama, N. Y.

"We are only one mile from Lake Erie and exposed to high winds; in fact, this is the windiest place along the great lakes. Your bees were able to stand the winter with only an insignificant loss, and we would have no others. As for honey they averaged 175 pounds of extracted surplus, did not swarm, and gave an artificial increase of 39 per cent, which is as fine a record as can be had in this locality, especially when the work is done entirely by amateurs." Name furnished on request. North East, Pa.

PRICE LIST OF OUR GOLDEN AND 3-BANDED ITALIAN QUEENS

Untested, .75	25 or more, \$.60 each.	S. Untested, .90	25 or more, \$.75 each.
Tested, \$1.50	25 or more, \$1.25 each.	S. Tested, \$1.75	25 or more, \$1.60 each.
		Virgins 30 cts each.	

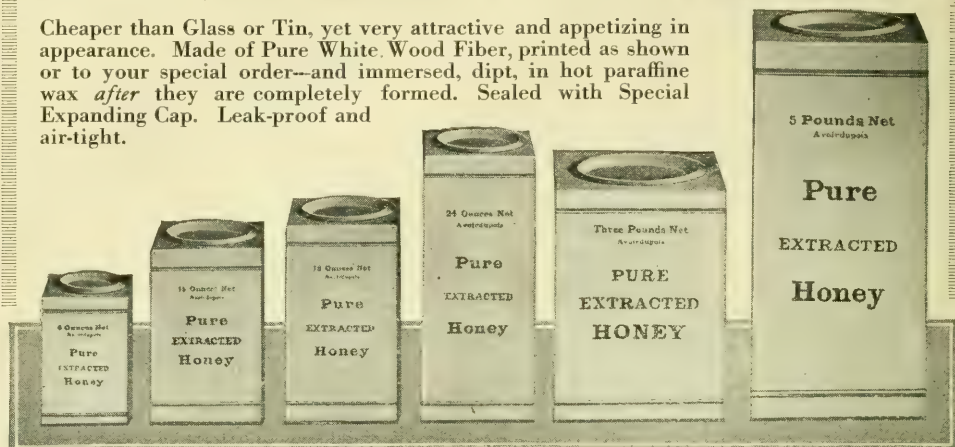
We guarantee safe arrival of all queens—that they are very resistant to European foul brood, and, in fact, will give complete satisfaction. Wings clipped free of charge. Our capacity is 2000 queens monthly.

M. C. Berry & Company . . Hayneville, Alabama, U. S. A.

Weis Fibre Containers
DIPT IN PARAFFINE USED ONLY ONCE

For EXTRACTED HONEY

Cheaper than Glass or Tin, yet very attractive and appetizing in appearance. Made of Pure White Wood Fiber, printed as shown or to your special order--and immersed, dipt, in hot paraffine wax *after* they are completely formed. Sealed with Special Expanding Cap. Leak-proof and air-tight.



Write for sample and leaflet "H"--either to us or to your Jobber of Bee Keeping Accessories. We also make containers for Cottage Cheese, Cream, etc., and for Home Dried or Dehydrated Vegetables, etc. Get in touch with us.

The **Weis** FIBER CONTAINER CORPORATION
 102 West Front Street
 Monroe, Mich.

SPECIAL PRICES ON SHIPPING CASES

THIS FALL we are making a rock-bottom price on our basswood comb honey shipping-cases. These cases have a one-piece cover and bottom, with corrugated straw-board in the bottom, and two-inch glass front and nails, all complete. They come in two sizes, for either 12 or 24 sections.

Cases for 12 sections	- - - - -	\$12.00 per 100
Cases for 24 sections	- - - - -	20.00 per 100

These prices are lower than you can obtain elsewhere, and the cases are of the highest quality, both in material and workmanship.

"Hivofelt," our especially prepared mat of flax fibre, is the best method of insulating your hives against cold. It is a necessity in a northern climate, and will be needed with the first cool weather. Let us send you a free sample.

We also have a full line of five and ten pound friction-top pails, and five-gallon square cans. These come one or two in a box. Write for our prices for immediate delivery. Order now and save money.

MINNESOTA BEE SUPPLY COMPANY

22 Power Building, Nicollet Island,
MINNEAPOLIS, MINNESOTA

YOUR PRINTING

Windmill power printed "Gleanings in Bee Culture" 45 years ago. Now an up-to-date plant with every facility does this work. This plant is at your service. Whether you want books, booklets, circulars, stationery, labels, tags, cartons, tickets, or tree-labels, this plant is equipped to do your work promptly and well.

As a trial order, let us print you some letter-heads and envelopes. Or a nice, neat business card with a little carefully selected advertising on it will astonish you with its results.

Remember: We have a large stock of cuts of bees, queens, hives and supplies. Also cuts of chickens, rabbits, flowers, apiaries, etc. Send for our sample booklet of cuts today. If interested in honey labels, send for our special honey label catalog at once.

*Won't you send us a trial order
for some printing today*

?

The A. I. Root Company
Medina, Ohio

LEWIS SECTIONS

HAVE INDIVIDUALITY

BECAUSE they are in a class by themselves. They are not like other sections. Very rarely do they break in folding—in fact, one of our customers writes us that he has put up (folded) thirty thousand Lewis sections in a season and had not found one section in the whole lot that was not perfect. Beekeepers everywhere, no matter what their preference may be for hives or other bee equipment, agree when it comes to sections that Lewis sections are supreme. This is—

BECAUSE the material which goes into a LEWIS SECTION is of the right kind, especially selected for the purpose. The stock is assorted and re-sorted—the discolored stock thrown out, leaving only the whitest material to go into LEWIS SECTIONS.

BECAUSE the V groove, which is the most important process in the manufacture of a section, is made just right. In the LEWIS SECTION it is cut just deep enough so that the section will not break in folding. The LEWIS SECTION expert has been supervising the manufacture of LEWIS SECTIONS for over thirty years.

BECAUSE the finishing of the section is given the utmost care. The LEWIS SECTION is polished on both sides in a double-surfacing sanding machine designed in the Lewis plant especially for this purpose. It insures the uniform thickness of each and every section. The dovetailing of the ends is smooth, clean, and just right.

BECAUSE, even after LEWIS SECTIONS are completely manufactured, the packing is considered a very important part of the marketing. All LEWIS SECTIONS are put up in regular standard packages containing a good full count. A tight wooden box is used, entirely enclosing the contents so that no discoloration from air can occur, no matter how long the sections are carried in stock. The package is also strongly braced at the corners, insuring delivery to you in good order.

**AT THE SAME PRICE YOU PAY FOR OTHER
STANDARD MAKES OF SECTIONS YOU GET ALL
OF THE ABOVE WHEN YOU BUY LEWIS SECTIONS.**

Insist on Lewis Sections. Look for the Beware Brand.

**G. B. Lewis
Company**



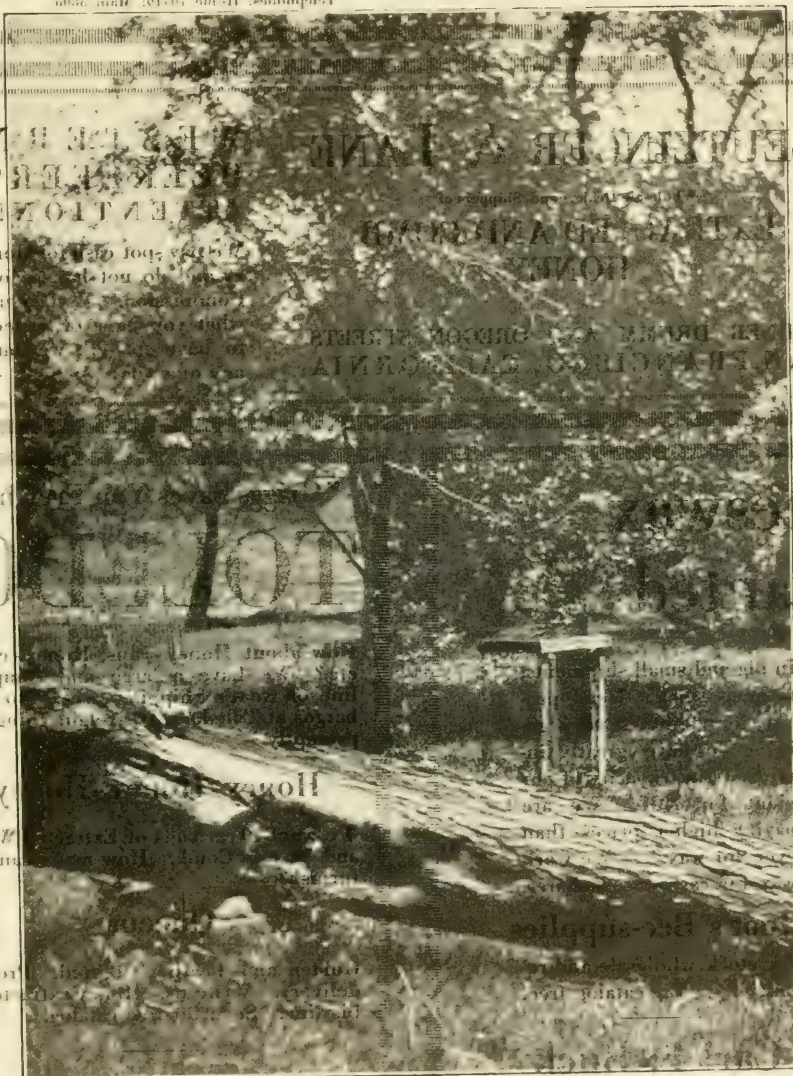
**Watertown,
Wis.**

Order from your nearest distributor.



Cleanings in Bee Culture

633 Central Bldg. Sixth and Main Sts.
Los Angeles, California
Telephone: 41-1019, 41-1020



The Old Log Home Laid Low

Vol. XLVI

October, 1918

No. 10

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you spot cash for anything you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.

633 Central Bldg., Sixth and Main Sts.
Los Angeles, California
Telephones: Home 10419; Main 5606

LEUTZINGER & LANE

Wholesale Dealers and Shippers of
**EXTRACTED AND COMB
HONEY**

CORNER DRUMM AND OREGON STREETS
SAN FRANCISCO, CALIFORNIA

WESTERN BEEKEEPERS ATTENTION!!

We pay spot cash for Honey and do not handle on Commission. Write us what you have or expect to have to sell, we buy any quantity. - - -

Beeswax Wanted

In big and small shipments, to keep Buck's Weed-process foundation factory going. We have greatly increased the capacity of our plant for 1918. We are paying higher prices than ever for wax. . We work wax for cash or on shares.

Root's Bee-supplies

Big stock, wholesale and retail. . . Big catalog free.

Carl F. Buck

The Comb-foundation Specialist
Augusta, Kansas
Established 1899

"Griggs Saves You Freight"

TOLEDO

How about Honey - cans, Honey - cases, etc.? We have a large and complete line of Root's Shipping-cases. No embargos at Toledo. All freight going out promptly.

Honey - Honey - Honey

We want 10 carloads of Extracted White and 10 cars Comb. How many can you furnish?

Queens

Golden and Leather Colored. Prompt delivery. Write us. Honey-extractors--big line. Send for free catalog.

S. J. GRIGGS & CO.,
Dept. No. 25 Toledo, Ohio
"Griggs Saves You Freight"



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THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

E. R. ROOT
Editor

Editorial Staff
A. I. ROOT
Editor Home Dept.

H. G. ROWE
Managing Editor

READY MONEY FOR YOUR HONEY!!

SHIP NOW. If you have honey for sale, we want to buy it. Ten thousand producers in all parts of the world witness to the reliability of this house. No purchase too large or too small. We handle many carloads a year. Send us a sample and name your most reasonable price. We buy every time your price justifies.

PROMPT REMITTANCE. Remittance sent by return mail for every shipment we receive. Honesty and integrity during the many years in the honey business have won for us the good will and confidence of thousands.

OLD COMBS AND CAPPINGS. Send them to us for rendering. We pay you the highest market price for beeswax, and charge you but 5c per pound for the wax rendered. It pays to send us your old combs and cappings.

WANTED, COMB HONEY. Comb and extracted Honey find ready sales here. Tell us what you have. We buy beeswax at high prices. Always glad to reply to inquiries.

WE SELL LEWIS BEEWARE. "Lewis," stands for the highest quality Beeware known. Safe and reliable, "Made like furniture." We are glad to fulfill your needs.

**DADANT'S FAM-
OUS FOUNDATION**

**ROOT'S SMOKERS
AND EXTRACTORS**

SEND FOR OUR 1918 BEE CATALOG

THE FRED W. MUTH CO.
PEARL & WALNUT STS. CINCINNATI, OHIO

Our New Home

We are now located at Pearl and Walnut Streets, and are in the largest Honey House in the country. When you are in Cincinnati don't forget to call on us, for it will be a pleasure for us to show you our wonderful new home.

- Get that last drop of honey.
- It's the maximum crop that is needed this year.
- You can't afford to let your bees be crowded for lack of equipment.
- We can ship goods to you promptly, and they are Root's Goods.
- HONEY CONTAINERS. We are the Michigan agents for the Weis fibre honey containers. They are inexpensive, clean, and leak-proof. Send 15 cents in stamps for samples and prices.
- HONEY WANTED.

M. H. HUNT & SON, Lansing, Michigan

HONEY WANTED

We are in the market at all times for unlimited quantities of honey, both comb and extracted. Before selling your crop let us hear from you, quoting your lowest price, either f. o. b. your station or delivered Cincinnati. - If extracted, mail sample, state how it is put up; if comb, state grade and how packed.

C. H. W. WEBER & COMPANY
CINCINNATI, OHIO

HONEY MARKETS

There is little change in the honey market to report. Prices remain firm, with the demand very generally exceeding the supply on the market. It is apparent that many honey-producers are holding back for even higher prices than the present market offers. The export situation, so far as we can learn, remains unchanged. The domestic demand has been increased in some localities by the needs of confectioners and ice-cream makers. The general tone of the present very strong market may best be learned from the quotations printed below.

U. S. Government Market Reports.

HONEY ARRIVALS SINCE LAST REPORT.

Medina, Ohio.—1,735 lbs. Florida, 29,580 lbs. Wisconsin, 40,140 lbs. Michigan, 1,223 lbs. North Carolina, 33,896 lbs. Ohio, 3,534 lbs. New York, 61,200 lbs. Wyoming, 24,300 lbs. Mississippi, 93,850 lbs. Pennsylvania, 83,290 lbs. Colorado, 33,000 lbs. Kentucky, Ia.

Keokuk, Ia.—Reports up to Sept. 9, 2,000 lbs. of unknown origin.

Hamilton, Ill.—Reports month of August: 2,160 lbs. from Illinois.

SHIPPING POINT INFORMATION.

San Francisco.—Demand and movement moderate. Shippers holding for higher prices. Cash to producers at country loading points, extracted per pound, water white, 21-22½c; sage white, 21c-22c; light amber, 20½c-21½c; dark amber, 15-18c. Beeswax, 33-35c per pound.

Los Angeles.—Shippers feeling practically no demand for export on account of refusal to grant export licenses. Market firm on account of active demand for domestic candy and ice cream manufacturers who are unable to secure enough sugar under present regulations. Prices practically unchanged. Cash to producer on farm, extracted per pound, white orange supplies very light, mostly 22c; light amber sage, supplies practically exhausted, 20½-21½c; white alfalfa, supplies exhausted, no sales reported; light amber alfalfa, 20-21c; amber alfalfa, 19-20c; white comb honey, \$5.50-\$6.00 per case. Beeswax, supplies increasing, growers holding for 40c; a few sales at 35-36c pound.

UNOFFICIAL SHIPPING POINT INFORMATION.

Caldwell, Ida.—Crop being packed. Demand moderate; five cars sold; carloads f. o. b. cash at track, extracted, in five-gallon cans, 22½-23c per pound; in ten-pound pails, 24c per lb.

TELEGRAPHIC REPORTS FROM IMPORTANT MARKETS.

(In many markets in the honey trade the term "jobber" is commonly applied to the original receiver who buys direct from the grower in carlot quantities. However, in these reports we use the term "wholesale carlot receiver" to designate the carlot purchaser, while the term "jobber" refers to the dealer who buys in less than carlot quantities from the carlot receiver and who sells direct to retailers. The prices quoted in this report, unless otherwise stated, represent the prices at which the "wholesale carlot receivers" sell to the "jobbers.") Arrivals include receipts during preceding two weeks. Prices represent current quotations.

St. Louis.—No arrivals. Supplies light. Too few sales to establish market.

Chicago.—No carlot arrivals. No cars on track. Supplies light. Demand and movement good. Prices slightly lower. Sales to jobbers, extracted per pound, Illinois and Iowa, white, 24-25c; amber, 22-23c; comb honey, No. 1, 28-30c; beeswax, 35-40c per pound, according to quality.

Portland.—Twenty-five tons arrived. Demand exceeds supply. Movement good. Sales direct to retailers, extracted per pound, five-gallon cans, amber, 27c; light amber, 30c; ton lots light amber, 27c. Comb honey, extra fancy, \$7.50 per case; fancy, \$7.00; choice, \$6.50.

New York.—Two cars California arrived incomplete. Receipts light. Demand moderate. Movement slow. Market firm. Extracted, per gallon, California, light amber, \$3.12-\$3.29; white, \$3.12-

\$3.36; Porto Rican, \$2.30-\$2.50, mostly \$2.40-\$2.50; New York, white, \$2.75-\$3.00. Beeswax, arrivals, 300 bags South America, 260 bags Africa, receipts light. Demand and movement good, market firm. Per pound, yellow, 43½-44½c; dark, 42-43½c.

Cincinnati.—Extracted, one car Colorado, one car Idaho, 4,596 lbs. from Alabama, 4,900 lbs. from Florida, 2,546 lbs. from Indiana arrived. Demand good. Movement moderate on account of high prices. Good out-of-town inquiry. Sales to jobbers, extracted, white orange, 26½-27c; light amber, 24½-25c. Comb honey, no supplies. Beeswax, demand moderate; average yellow, 36-38c lb.

Minneapolis.—Minnesota receipts very light. Demand and movement good. Prices considerably higher. Sales Sept. 13, to jobbers, extracted Minnesota, 60-lb. cans, 30c per lb.; comb honey, Minnesota, 24-section cases, \$6.25 per case.

St. Paul.—No supplies on market; no sales.

Denver.—Approximately 10,000 lbs. white extracted and 1,500 cases comb honey. Demand exceeds supply. Movement brisk, little change in prices. Sales to jobbers, comb honey, Colorado white, \$6.00-\$6.50 per case. Extracted, white, mostly 25c per pound. Beeswax, receipts light; cash to producer on farm, 37c per pound.

Spokane.—Supplies light. Movement good. Sales direct to retailers, extracted per pound, Washington and Idaho, light amber, alfalfa, 27-28c per lb. Comb honey, No. 1, white, \$6.25-\$6.50 per case, some \$6.75.

Kansas City.—Comb receipts very light. No express arrivals. Approximately 50 packages by freight arrived. Demand slow. Movement limited. No change in prices. Sales to jobbers, comb, native Missouri, quality and condition generally good, 24-section cases, light No. 1, \$6.50-\$7.50. Extracted, quality and condition generally good. Light amber, 23-25c pound. Beeswax, receipts very light; supplies very light; demand light; movement slow; no change in prices at 33-35c pound.

Philadelphia.—Two hundred and five cases, 191 kegs, 3 barrels from New York, 4 kegs from New Jersey, 58 barrels and kegs from Florida, Georgia, and North Carolina arrived. Demand slow, no sales reported.

Charles J. Brand,
Sept. 16, 1918. Chief of Bureau of Markets.

General Quotations of Wholesalers.

[These firms are asked to quote the wholesale prices they make to retailers. Accordingly their prices must be figured at least one profit higher than the price paid the producer. The large dealers do not quote prices in print that they will pay futurally to producers.]

CHICAGO.—Receipts of honey of all kinds have been light up to this writing, with offerings scant. There is not much trading, hence prices are on small lots. We quote comb honey, per lb. of 16 oz., fancy, 35c; No. 1, 32c; No. 2, 27 to 30c. Extracted honey, white, per lb., 23 to 25c; light amber, in cans, 20 to 22c; amber, in cans, 17 to 20c. Clean, average yellow beeswax, per lb., 38 to 40c.

R. A. Burnett & Co.
Chicago, Ill., Sept. 16.

ST. LOUIS.—Very little comb honey in this market, and demand only fair at present high prices. Southern extracted in good demand. Comb honey, extra fancy, per case, \$6.50; fancy, \$6.00; No. 1, \$5.50; No. 2, \$5.00. Extracted honey, light amber, in cans, 22c; in barrels, 20c. Clean, average yellow beeswax, per lb., 40c.

R. Hartmann Produce Co.
St. Louis, Mo., Sept. 16.

KANSAS CITY.—The arrivals of comb honey are very light and the demand good, at around \$6.50 to \$7.00 per case. Extracted is selling at around 25 cents a pound. Clean, average yellow beeswax, per lb., 35c.

C. C. Clemons Produce Co.
Kansas City, Mo., Sept. 17.

PORTLAND.—There seems to be enough honey in the country, but the "bee men" are holding for a higher market. A great deal of Hawaiian honey is being sold on this coast, and in some instances South Wales honey is offered. The demand for

home consumption is growing less, on account of prices being too high. Comb honey, extra fancy, per case, \$6.50; fancy, \$6.25. Extracted honey, white, per lb., 23c; light amber, in cans, 20c; amber, in cans, 18c. Beeswax, none offered.

Pacific Honey Co.

Portland, Ore., Sept. 12.

BUFFALO.—Money market is firm and stocks keep well cleaned up. Comb honey, extra fancy, per lb., 28c; buckwheat, 26c. Extracted honey, white, (per lb.) 21-22c; amber, in cans, 18-20c.

Gleason & Lansing.

Buffalo, N. Y., Sept. 16.

CLEVELAND.—Our market is still bare of new comb honey. There is now some inquiry for it and we think some nice stock would sell at the following prices: Comb honey, fancy, per case, \$6.50 to \$7.00; No. 1, \$6.00 to \$6.25; No. 2, \$5.00 to \$5.25.

C. Chandler's Sons.

Cleveland, O., Sept. 16.

FLORIDA.—Inquiries for honey, but none on market. Beeswax, none in market.

S. S. Alderman.

Newahitchka, Fla., Sept. 16.

TEXAS.—Honey market has changed very little since last report. Light amber extracted sells readily at 18c. No white honey to be had. Beeswax is some lower, clean average yellow bringing 26c.

Sabinal, Tex., Sept. 16. J. A. Simmons.

MONTREAL.—Crop is a good average one. Quality of clover honey is very good. Expect a large crop of buckwheat. Comb honey, extra fancy, 30c; fancy, 29c; No. 1, 28c; No. 2, 25c. Extracted honey, white, 27c; light amber, in cans, 25c, in barrels, 24½c; amber, in cans, 24c, in barrels, 23½c.

Gunn, Langlois & Co., Ltd.

Montreal, Can., Sept. 16.

TORONTO.—New strained honey in tins is selling at from 28c to 30c per lb. Stocks appear to be very light and offerings are small.

Toronto, Can., Sept. 16. Eby-Blain, Ltd.

HAMILTON.—We have received some very fine extracted honey but the supply is not large. Have not received any comb honey yet. Demand is fair for this time of year. Shippers say they are too busy to clean up comb honey, etc. Extracted honey, white, per lb., 27c in 5- and 10-lb. pails; light amber, none.

Harry W. Fearman.

Hamilton, Ont., Sept. 16.

CUBA.—Extracted honey, light amber, in barrels, \$1.80 to \$1.90; amber, in barrels, \$1.80 to \$1.90. Clean, average yellow beeswax, per lb., 38 to 39c.

Adolph Marzol.

Matanzas, Sept. 10.

MEDINA.—Little change from last month. Extracted car lots offered more freely. Comb honey moving slow; prices unchanged. For fancy white comb we pay \$6.00 to \$6.50 per case; for No. 1 comb, 50c less. Extracted ranges from 18 to 22½c. The result of the order of Aug. 10, putting honey on the export conservation list, still in doubt.

The A. I. Root Co.

STATEMENT OF OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., OF GLEANINGS IN BEE CULTURE, PUBLISHED MONTHLY AT MEDINA, OHIO, REQUIRED BY THE ACT OF AUGUST 24, 1912.

Editor, E. R. Root, Medina, Ohio; Managing Editor, H. G. Rowe, Medina, Ohio; Publisher, The A. I. Root Co., Medina, Ohio. Owners: The A. I. Root Co. Stockholders holding 1 per cent or more stock as follows: A. L. Boyden, Carrie B. Boyden, Constance R. Boyden, L. W. Boyden, Mildred C. Bryant, H. R. Calvert, J. T. Calvert, Maude R. Calvert, A. I. Root, E. R. Root, H. H. Root, Susan Root, all of Medina, Ohio, Ralph I. Bostwick, Seville, Ohio. There are no bondholders, mortgagees, and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities.

E. R. ROOT, Editor.

Sworn to and subscribed before me this 18th day of Sept., 1918. H. C. WEST, Notary Public. (Seal)

TRADE NOTES

On account of the new Government regulations as to subscription prices, the combination of Green's American Fruit Grower, American Poultry Advocate, and Gleanings in Bee Culture, heretofore offered at \$1.25, has to be advanced to \$1.50 after Oct. 1 (this date). But at the new price, it is the most profitable subscription investment that a beekeeper, a poultryman, or a fruit grower can make.

We shall probably have to withdraw or make an advanced price on all of our combinations as hitherto offered with a Gleanings subscription.

The A. I. Root Co., Publishers.

Special Notices by A. I. Root

HOW TO MAKE AND RUN A HOTBED OR COLD-FRAME.

During these war times there is a greater incentive than ever before to make use of hotbeds and cold-frames. By the way, it seems to me here is a wonderful opening for the boy and girl gardeners of the present time. My attention was called to the matter just now by reviewing a booklet of 25 pages, which we have for years furnished free of charge in connection with the manufacture of sashes for hotbeds and cold-frames. The booklet is of exceeding value, and its teachings are sound, even tho the book was originally published several years ago. As we still have a large stock of them on hand, it will be mailed free of charge on application; and, whether you buy your sashes of us or get them elsewhere, the book will certainly prove a great help to anybody interested in "high-pressure gardening." Even down in Florida we find cold-frames in winter a big help. For correct up-to-date prices on hotbed sash, see our regular catalog.

THE USEFUL THREE

Due to Government regulation of subscription terms, we have to advance this triple combination from \$1.25 to

Gleanings in Bee Culture	} One Year \$1.50
Green's American Fruit Grower	
American Poultry Advocate	

ADDRESS

Gleanings in Bee Culture, Medina, O.

KEEP YOUR LIBERTY BONDS

BE 100 PER CENT AMERICAN PATRIOT

THE BONDS, TOO, ARE THE SAFEST INVESTMENT ON EARTH.

Season 1918 Closed



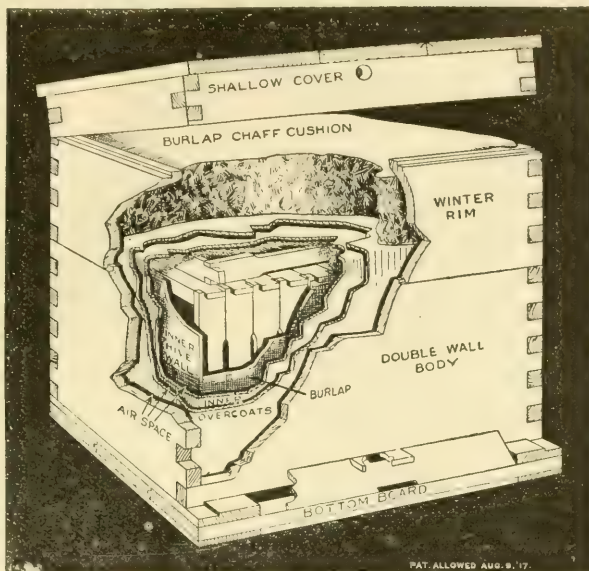
LOOK out for next year by ordering your supplies now and secure 10 per cent early order discount. The high prices now ruling for honey will no doubt continue for 1919 and it behooves the beekeeper to be prepared to secure all the honey it is possible to get. By ordering now the supplies needed will be on hand when wanted. Freight again this year has been slow. In fact some shipments made last summer have not reached some. Express has been better, but even express shipments have had their delay in delivering. Mail orders so far have been delivered pretty promptly. Send in a list of your requirements and we will be glad to quote you or request a Price List with latest prices.



F. A. SALISBURY
1631 WEST GENESEE STREET
SYRACUSE, NEW YORK

WINTER PROBLEM SOLVED

by the Hive with an INNER OVERCOAT



THE INNER OVERCOATS DID IT. During the severe Winter of 1917-18, there was a little apiary of thirty-seven colonies, near Grand Rapids, Mich. Seven of the colonies were in Protection Hives with the Inner Overcoats, all of which came through in perfect condition and without loss. Thirty of the swarms were in hives without the Inner Overcoats and they suffered a loss of some 40 per cent to 50 per cent. This was a severe test as the temperature went as low as 20 degrees below zero, for many weeks. The value of the bees that were lost, had they been saved, would have more than paid for new hives for the entire lot.

Have you ever stopped to think what it would be worth to you to insure your bees against Winter Losses? The life of a Protection Hive will be at least 25 years. Now figure what the cost will be per year, spread over its lifetime. You cannot afford to buy anything else. You need a certain amount of protection from cool weather during Spring and Fall. Get away from the winter packing case nuisance, with all its expense, extra labor, and inconvenience. With Protection Hives you have a neat, compact and efficient equipment.

Protection Hives are made of $\frac{7}{8}$ material in the outer wall and will last a life time, as they are not permanently packed. The packing in a permanently packed hive in a comparatively short time, will absorb moisture, become matted down and not occupy more than two thirds of the space and will rot out the hive and otherwise get in bad order. When preparing Protection Hives for Winter, a piece of burlap is placed over the top of the frames and then two bottomless corrugated paper boxes, Inner Overcoats, are telescoped down over the brood nest, in between the outer and inner hive walls. This provides the burlap with two thicknesses of the corrugated board on the sides and four thicknesses over the top as insulators. They are removed in the Spring and it takes not over two minutes to insulate a hive for Winter or remove it in the Spring by this method. There are many dead air space compartments in this paper and between it.

Send for a special circular showing 10 large illustrations. It has been necessary to advance prices but for the next 60 days, we will sell from one to five sample complete hives in a place at \$5.00 each.

TIN HONEY PACKAGES

2	lb. Friction top cans in cases of 24	5	lb. Friction top pails in crates of 100
2	lb. Friction top cans in crates of 612	5	lb. Friction top pails in crates of 203
2½	lb. Friction top cans in cases of 24	10	lb. Friction top pails in cases of 6
2½	lb. Friction top cans in crates of 450	10	lb. Friction top pails in crates of 113
5	lb. Friction top pails in cases of 12		

Write for prices on friction top cans and pails and 60-lb. cans, giving quantity wanted.

A. G. WOODMAN CO., Grand Rapids, Mich.

MR. BEEKEEPER!

You Can Help Win the War

By Ordering Your Supplies Now

By ordering standard goods so as
to enable manufacturing plants
to increase production

By wintering your bees with care-
ful attention to their comfort and
safety

Get busy now and make up a list of your requirements ---a big discount is offered for early orders---take advantage of prevailing transportation conditions, later on it may be more difficult to secure prompt shipment. Remember, every pound of honey produced will release its equivalent of butter or sugar for other purposes of food.

INCREASE YOUR HONEY PRODUCTION
THE ITALIANS ARE OUR ALLIES

G. B. Lewis
Company



Watertown,
Wis.

Order from your nearest distributor.

GLEANINGS IN BEE CULTURE

OCTOBER, 1918

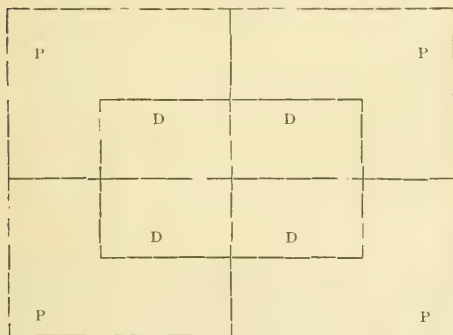
EDITORIAL

AFTER THE matter describing the Demuth plan was in type and page form we

More Concerning the Demuth Plan.



thought of another idea; and that is, to put four three-story hives close together in contact, back to back and side by side, and then place the four Demuth cases in the inner corners of those four three-story hives. In the diagram, D, D, D, D would represent the Demuth cases and P, P, P, P the packing between the Demuth cases and and inside



of the four tiered-up hives. This increases the amount of packing and gives the advantage of a larger inner case or 8-frame size instead of 7-frame. It would have the further advantage that the four clusters will be brought together (perhaps by stapling) as closely as possible, thus sharing each other's heat.

To work out the scheme to the best advantage, the four tiered-up hives should stand up on one platform, and should then be covered with a large square of waterproof paper so as to shut off all draft that might penetrate the cracks between the hives. One large cover should go over the whole. This plan would make the cost of packing much less than the scheme of packing four hives in one large outer case, and at the same time give an eight-frame colony an opportunity to build up to ten-frame strength by May 1 or 15 before unpacking. The plan will be more elaborately described in our next issue.

Mrs. Demuth, in our present issue, page 596, calls attention to a very important factor—namely, the ratio of the area of the

walls inside of the packed chamber where the cluster is located to the packing surrounding them. The smaller this area, the less packing, relatively, will be required. It will follow, then, that either of the Demuth plans will require less packing than the regular quadruple case.

The ground plan of packing four hives in a large quadruple packing case as proposed by Wesley Foster, on page 599 of this issue, is most excellent. It has the advantage that there would be less drifting in the spring, because there will be only one entrance on the side instead of two entrances on the side in the regulation way. It would require a slightly larger case, but the advantage is great.



SO FAR as we know, no one has had any difficulty in securing sugar, provided he followed the direc-



The Present Sugar Situation.

tions given in our issue for September, page 521. But those who do not

take any bee journal have had all kinds of trouble because they did not know how to proceed. The subscriber to a bee journal has a great advantage over the one who thinks he can not afford to take a bee paper. For the sake of winning the war, will the subscribers of Gleanings kindly loan their copies for September to the local beekeepers who do not have any bee journal, and much less Gleanings?

When the report came in our Minnesota correspondence that the beekeepers who had sold their honey would have to pay over to the Red Cross an amount equal to the difference in the cost of the honey sold and the sugar fed to the bees, we wired Dr. E. F. Phillips asking if there was a ruling to that effect, and received back the message that no such ruling had been issued. In this connection Dr. Phillips feels that, owing to the scarcity of sugar, beekeepers should use as little as possible, and then get more next spring if necessary. He believes that the beekeeper who has bee disease or bad fall stores or who is short of stores, should have a limited amount of sugar; but he also believes that the man who has had a good crop, sells all his honey, has no disease, and then feeds sugar because it is cheaper, is profiteering.

SO SERIOUS a freight-rate situation is threatening honey interests, as a result of losses in transit due to careless packing, that a most earnest warning is in order.



Warning of a Serious Matter.

That our readers may be entirely assured that such warning is based on facts and experience, we have called upon the A. I. Root Co.'s traffic manager, H. H. Hartzog, to state the present freight situation as regards honey. Mr. Hartzog has spent many years of his life as a railroad traffic man, and speaks out of a ripe experience. Here is what he has to say to Gleanings readers:

In the August issue of Gleanings, page 465, there was printed an article by H. H. Root entitled "A Needless Loss of Honey." On pages 466 and 467 were photographs of honey-containers taken on arrival in Medina, showing large losses of honey due to improper packing.

The A. I. Root Co. and other large buyers of honey are now confronted with even more serious conditions than prevailed two months ago. Consignment after consignment is arriving in bad shape, resulting in enormous losses and many claims entirely out of proportion to the size of shipments. Seventy-five per cent of these must be charged to poor packing. If for no other than patriotic reasons, all this honey should have been properly protected by good, substantial containers before having been offered for shipment.

While it is true that the railroads will have to pay for all loss while in transit, yet, Mr. Shipper of Honey, did you ever stop to think that needless waste is one of the large factors that help to make the high cost of living, and that in the end you are paying dearly for your carelessness? It makes no difference what the commodity may be, freight rates are based on the value of the article, and a certain profit to the railroad has to be realized. If loss in transit is such that the commodity can not be handled at a profit at the rate in force, then a raise in rates results. Every claim presented on any certain commodity is charged by the railroad company against that commodity's earning, and tends to raise its freight rate. Who, then, pays the loss in the end? The shipper does.

The unexpected visit of an inspector to the Root company's office a day or so ago impressed upon us the fact that the enormous increase in claims being presented to the carriers the last few weeks will force the railroads to take new measures. The information obtained by this inspector from personal inspection here of many lots of honey recently received, particularly shipments from the South, will have much to do with determining a higher freight reclassification in that territory in the near future.

The A. I. Root Co. can truthfully say that it has long since passed the experimental

stage in packing or preparing merchandise for shipment, and has found that cheap containers are a failure, and expensive in the end. In reviewing our own shipping records we find claims chargeable to poor packing have been reduced 50 per cent; also, that goods reaching their destination in first-class condition result in a pleased customer. We are alive to the fact that well-packed and prepared shipments are given a severe test while in the hands of the railroads, and that a large per cent of loss and damage is chargeable to them; but we must remember the railroads' trials are many at the present time, and that their facilities are taxed to the limit. With all the faults of the railroads, there is no excuse for failure on the part of the shipper to lend every assistance possible to avoid loss.

Don't ship honey worth 20 cents a pound in old hat-boxes, just because they can be had for nothing. Don't pick up an old pine barrel that some one has discarded, with only one hoop at either end (this has been done), and load it up with a hundred dollars' worth of honey, when you must know that it is likely to go to staves long before it reaches its destination. Spend a little more money and time in preparing shipment. Secure the best case or barrel to be had (all barrels should have eight hoops, four at each end), so you will not have to drive at a snail's pace on your way to the railway station and hold your breath in mortal fear lest the barrel go to pieces before the railroad agent gives you a bill of lading.

Mr. Careless Indifferent Shipper, in addition to a 25-per-cent raise in freight rates, which was effective June 25, 10 per cent of which statisticians tell us was directly chargeable to you, there is now pending a change in classification on honey, brought about by enormous losses largely due to poor packing, which will further increase rates 12 to 18 per cent.

These considerations of increased freight rates on honey due to improper packing should serve to reform the practices of honey-shippers generally.



THE GOVERNMENT'S policy of conservation, looking to the elimination of every possible waste, has now

No More Free Gleanings.

reached all publishers, demanding the use of the very least amount of paper possible in their business. Accordingly, Gleanings has received express orders to discontinue all complimentary copies and all copies sent to exchanges, and to print no more copies than are strictly necessary to supply its paid subscribers and active correspondents. Even sample copies of our journal are forbidden. So a considerable number of our friends to whom we have been under obligation and so have been glad to send them Gleanings free heretofore, will understand why it cannot be sent free to them after this date.

THE key to successful wintering unlocks the door to success in beekeeping. If bees winter poorly, the owner will be handicapped during the entire

season. A bad start in anything is always a drag clear thru. If there ever was a time when I wanted beekeepers to read carefully what I have to say, it is right now, for most beekeepers winter outdoors. In saying this I do not mean that I know it all; but I do mean that my opportunities for observation have been much greater than those of the average beekeeper. I have traveled extensively over several States during the last few weeks. I have interviewed Government experts and beekeepers who have wintered their bees successfully outdoors. I know why some others have failed. Out of these failures and successes I can give some information that may be helpful.

Before I go into the subject fully I wish to present at the very outset a few of the fundamentals for wintering outdoors—not necessarily in the order of their importance, but approximately so.

1. Strong colonies made up largely of young bees will often winter successfully even when other conditions are not favorable; but far better when they are favorable. Good colonies also imply good queens.

2. An abundance of good stores.

3. Shelter from prevailing winds; and

THE BEST OUTDOOR WINTERING

The Great Importance of Windbreaks and Plenty of Packing in Addition to Strength of Colony and Good Stores

By E. R. Root

this means windbreaks of some sort. These may be in the form of trees, high board fences, or buildings.

4. Packing, and an abundance

of it. While some colonies have wintered on a small amount of packing, it is evident, from the results of last winter that more packing would have been better. In connection with the subject of packing I may say that a large amount of deep snow—deep enough to cover the hives—in a locality cold enough to keep it light and fluffy during the entire winter, is beneficial. If we could always have plenty of dry snow, less packing would be required. When I emphasize the importance of packing I also include bottom packing. I also wish to make it clear that the value of packing will be somewhat lost unless it be applied early, during September or not later than October. Don't put it off too long.

5. A restricted entrance. Many a colony has been lost, yet having all the essentials just mentioned, simply because the entrance was too large, making it impossible for the bees to keep the interior of the hive warm.

Permit me now to elaborate each of the propositions.

No. 1. All the other essentials may be present; but if the colony is weak it may die before spring. It must be strong enough to maintain a bodily heat of somewhere around



Fig. 1.—Out-apiary belonging to R. F. Holtermann, near Hagersville, Ontario, Canada. This yard is located in second-growth timber, and its owner says that the windbreak is so perfect that this yard winters better and produces more honey than any other yard he has. The hives are 12-frame, and are 4 and 5 stories high. This would make 48 and 60 frames respectively, or the equivalent of 6-, 7-, and 8-story hives, if the bees were in an 8-frame hive. Dr. Miller, in *Stray Straws* in this issue, believes that such skyscrapers are of rare occurrence.

57 degrees F., in the center of the cluster. Unless this cluster is large enough the bees will be compelled to raise the temperature by activity. This activity in midwinter is liable to start breeding too early in the winter, with the result that the colony will die with dysentery in December or January. That the cluster be made up of young bees is very important; and in order to get these young bees the bees should have a good queen, and, in addition, be given stimulative feeding in August or September, providing no honey is coming in from the fields. Many localities have a sufficient fall flora so that breeding continues into cool weather. If the locality does not already have a fall flow on which the bees can rely, the whole apiary can often be removed to advantage to a locality 10 or even 20 miles away where there is such. During this year of scarcity of sugar, such a procedure may not only be necessary but patriotic as well.

It is impossible to get good colonies for winter without a good queen, so that whenever mention is made of a good colony for winter it implies a good queen and probably a young one. If I could have my way, I would have every queen in the apiary not more than a year old. A queen two years old may not be inclined to lay in August and September. A queen that will not lay during these months under the stimulus of a natural honey flow or feeding should be replaced at once.

2. One reason why there was such a heavy mortality last season was because beekeepers were not able to obtain enough sugar last fall to supply the deficiency of food from natural sources. It is well known that colonies wintering outdoors require

more stores than those wintering indoors. It would be well to figure on about twice as much. Dr. E. F. Phillips of the Bureau of Entomology recommends over 40 pounds for a two-story colony. A single-story colony should have anywhere from 25 to 30 pounds, and more will do no harm. Indeed, it may be a splendid investment. When I say "good stores" I mean sugar syrup or good table honey, such as clover, basswood, alfalfa, or any light honey that sells well in the open market for table purposes. Sugar syrup, if fed early enough, is an almost perfect food during cold, non-flying periods of the winter; but when bees are beginning to fly, then natural stores are unquestionably better. Honey, besides containing more or less pollen, has other food elements that apparently give the colony in the spring a bigger boost than sugar syrup only. Sugar syrup for indoor wintering, during the dormant period, on account of no possible chance for cleansing flights that outdoor bees get, is probably superior to any honey that the bees may have. It is less conducive to dysentery. I am frank to say that I prefer sugar syrup for cellar wintering; but I would never go to the expense and trouble of taking out good honey stores and replacing them with sugar, especially when sugar is so scarce. Moreover, I prefer natural stores after the bees are put out in the spring.

3. I have placed shelter or windbreaks third in importance, not so much because packing is less important, but because the value of shelter from prevailing winds is generally underestimated. I ran across some beekeepers who leave their apiaries out in the open, exposed to wind from all direc-



Fig. 2.—An outyard belonging to the president of the National Beekeepers' Association, David Running of Filion, Mich. The windbreaks of young timber on three sides protect these bees; and, as will be seen, it is prosperous. The editor photographed the skyscraper that appeared on the September cover of *Gleanings* in this yard. This is all 8-frame. It will be observed that there are other skyscrapers, proving that, with good bee management and good location, these skyscrapers are not of rare occurrence. (See p. 485.)

tions, winter after winter. They say (or rather think) the bees have wintered well; but I am positive that if those same apiaries were surrounded by a good fence, a shelter of trees, or buildings, the colonies in the spring would not only be stronger but would have more stores remaining in the hive.

I have run across scores of instances in my travels where bees in single-walled hives properly sheltered from prevailing winds have wintered comparatively well. I have also run across scores of instances where colonies in double-walled hives out in the open have wintered very poorly, all because of the lack of a screen to shut off the winds. Take the case of our own houses. It takes much more coal to heat a house with a freezing temperature and a high wind than it

closure in a piece of woods with a south exposure. (See Fig. 2.)

The next best protection is a shelter of buildings. The ordinary back lot in a city or town, with dwellings, barns, outbuildings, fences, and hedges or shrubbery in all directions, is usually an ideal place to winter bees.

In many cases beekeepers will have to make their own windbreaks, unless they can afford to wait for a row of evergreens to grow, and that takes from 10 to 20 years. A high board fence is a good windbreak and easily built. The boards in the fence should not be placed tight together. Experience proves that it is better to let the wind filter thru slowly than to strike a solid surface and glance upward and then shoot downward on some row of hives inside. The fence



Fig. 3.—This apiary belongs to Floyd Markham, Ypsilanti, Mich., secretary of the National Beekeepers' Association. This yard is surrounded by a fence, small trees, buildings, and is on a slope of ground that faces the south. From the standpoint of windbreaks it is ideally located; and, altho the season was rather poor, it will be seen that the bees were doing things.

does on a still day with a zero temperature. Taking everything into consideration, if I had to choose between colonies packed and colonies in single-walled hives sheltered, I would take the latter. As a matter of fact, I much prefer to have both packing and shelter.

Unquestionably the best form of windbreaks is second-growth timber, trees with trunks as large around as a man's arm, and 20 to 30 feet tall. R. F. Holtermann told me last summer that the yard that gave him the best results is the one located in the slashing where he cut out a little clearing. A photograph of this yard, with 12-frame supers piled up one on top of the other, is pretty good proof of the statement. (See Fig. 1.) The next best windbreak is an in-

shown in Fig. 9 would be much better if the boards were two inches apart. The ideal fence is one made of ten-inch boards placed about two inches apart. It is more practicable to nail the boards horizontally, as shown in Figs. 4 and 5. In this case the posts should be set every six or eight feet apart, depending on whether the boards are 12 or 16 feet long. The fence should not be less than 8 feet high. Some prefer to make a fence like that used by R. F. Holtermann. (See Figs. 6, 7, and 8.) The boards are nailed vertically on cross-pieces fastened to the posts. If the fence is more than ten feet high, it would be more practicable and perhaps cheaper to use this style.

Believe me, dear reader, do not get the notion into your head that, because you have

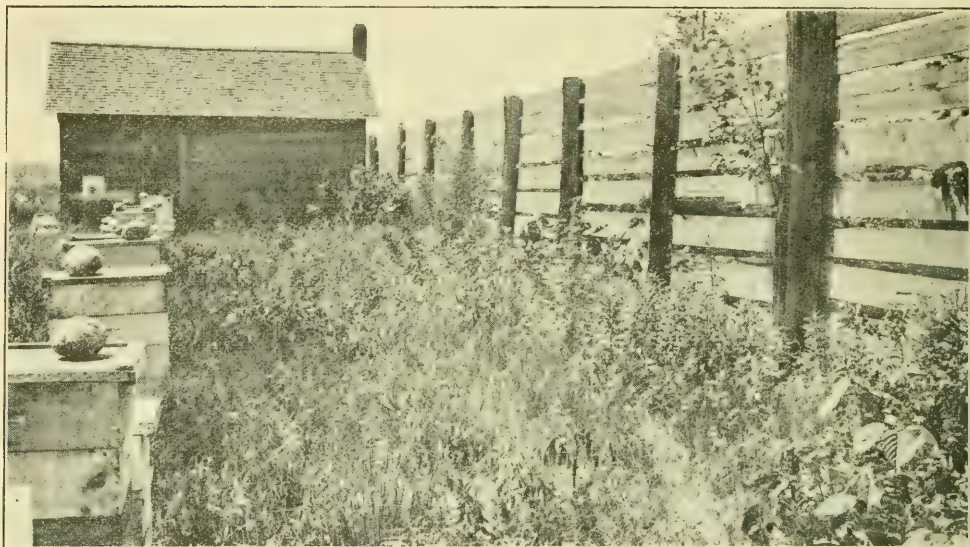


Fig. 4.—Fence windbreaks put up by Pete Sowinski, at Bellaire, Mich. "Pete," as he is familiarly called, is one of the best beekeepers in the country, and he believes in cellars of the David Running type, as described in our last issue, and that, of course, means good wintering. He is also a firm believer in windbreaks. This is the best-constructed fence for inclosing beeyards that we have seen anywhere. It is easy to make, and strong.

wintered bees out in the open, it is good policy. Because one man 80 years of age boasts that he has drunk liquor every day of his life it does not prove that such a policy is safe. Because one man here and there winters in the open it does not prove that it is wise. Invariably, the colonies (even tho packed) that die in our locality are the ones exposed to a direct windsweep.

If there is anything the importance of

which I feel like hammering into beekeepers, it is the importance and value of windbreaks; and I shall continue to harp on this subject, probably, all winter. I am not guessing. If there is anything that I feel **I absolutely know**, it is that windbreaks are a splendid investment—an investment that will pay a big dividend year after year. They are not only necessary during winter but also during fall and spring.



Fig. 5. This shows a more general view of the apiary and windbreaks of Pete Sowinski, as mentioned in Fig. 4. The season proved to be rather light.

4. If there ever was a winter that emphasized and proved the importance of packing, and a lot of it, it was last winter. If I could take some of these no-packing fellows, or those who believe in limited packing, with me over the trips where I have gone during the last two or three months, I think I could convince them that they are making a bad mistake by persisting in the policy of wintering or trying to winter with limited packing. Wrapping hives in paper is little better than nothing. But, fortunately, many of these no-packing or limited-packing chaps do not need to be shown, for they have already been "shown." They lost anywhere from 80 to 95 per cent of their colonies last winter.

Granted that some packing is necessary, how much must we have? I am convinced

large amount of packing—not less than 6 inches at the sides and ends, 4 at the bottom, and 10 at the top. While that amount seems to be excessive, it costs but little more to make a case large enough to give the necessary amount of packing.

A good many of our best beekeepers think that bottom packing is not only unnecessary but expensive. It is decidedly so, says Dr. Phillips, with the ordinary kind of winter entrance. But when the entrance is reduced to a single round $\frac{3}{8}$ -inch hole during the coldest part of the winter, bottom packing is a necessity, says Dr. Phillips. I shall refer to entrances later.

Ira D. Bartlett of East Jordan, one of the best beekeepers in Michigan, was one of the first, if not the first, extensive honey-producer to use four-hive packing cases, now rec-



Fig. 6.—This is another outyard belonging to R. F. Holtermann, as mentioned in Fig. 1. Figs. 6 and 7 show the form of windbreak adopted by Mr. Holtermann. The fence is 12 feet high, and the boards are not nailed close together. Both figures show that the skyscraper is not a rare bird. If these 12-frame hives could be converted into 8-frame hives, they would need a prop to keep them from tipping over. It pays to have windbreaks, says Mr. Holtermann; and the proof of the statement is here shown.

that A. I. Root, away back in the late 70's and early 80's, was pretty nearly right when he constructed his old two-story chaff hive that provided for 5 inches of packing on the sides, 10 inches on the top, and 2 on the bottom. Indeed, Dr. E. F. Phillips told the beekeepers at the Ohio field meet that A. I. Root, who was then sitting before him, had built the best winter hive that was ever made. Then he went on to state that in later years the mistake was made of providing improved (?) hives with less packing, with the result that they had taken an enormous toll of the bees of the country.

Under Dr. Phillips' directions a series of experiments have been conducted at the Government apiary showing the value of a

ommended by the Government bee experts. In this issue there is shown (See Fig. 9) an illustration of some of the original Bartlett hives made over 25 years ago, and which are now coming to be used very generally by some of our best beekeepers in the Northern States for wintering. R. F. Holtermann and numerous other Canadian beekeepers have since adopted the same general scheme of wintering. The case takes in four colonies, leaving from 4 to 6 inches of packing around the hives, 3 or 4 inches of packing on the bottom, and 8 or 10 inches of packing on the top. It is certainly cheaper to put four hives in one case than four hives in four cases. Moreover, when the four hives are placed together in contact it is necessary to afford



Fig. 7.—This is a view of another Holtermann yard, showing the same principle of wind protection as shown in Fig. 6.

protection to only one side and one end of each hive. In Fig. 10 we show the scheme of packing four hives in a case advocated by Government experts. Dr. Phillips recommends wintering each colony in two hive-bodies instead of one. In other words, he recommends having strong colonies placed in two ten-frame Langstroth hive-bodies, four of such double-story colonies in each case.

The ordinary packing case of this description will run from about \$2.50 to \$3.50 per colony, or from \$10.00 to \$15.00 per case, the beekeeper buying his own lumber at the mill and making up the cases himself. Even a piano-box new now costs the factory making it from \$10.00 to \$12.00. While the expense of the big case seems to be a large outlay, yet when it is remembered that a good colony in the spring is worth four or five weak

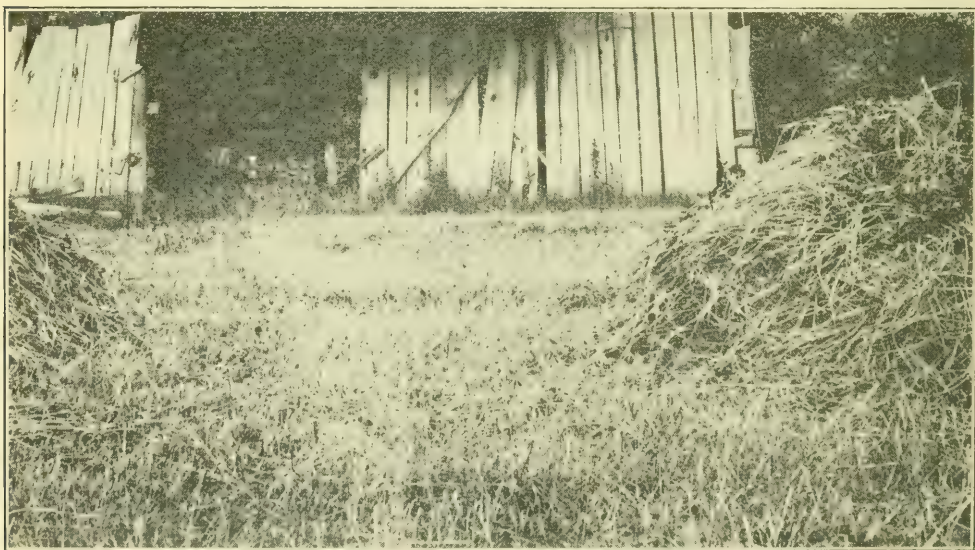


Fig. 8.—This shows an exterior view of one end of the Holtermann windbreaks. Mr. Holtermann has a roadway running directly thru the center of his yard. A gateway is provided at each end, connecting with this road. This makes it possible for Mr. Holtermann to run his automobile truck thru the center of his yard, thus eliminating the carrying of heavy supers; and they are heavy, because they are 12-framers, running as high as 100 pounds to the super. During the spring and winter the big gates are closed.

ones, and that one good colony may gather \$25.00 worth of honey while the weak one may not gather more than \$2.00 worth, it would seem that the expense of the case is justified. The big cases ought to last for 10 years and hence the cost should be divided by 10, making the price per colony 30 cents a year.

One difficulty we have had with these quadruple cases has been drifting in the spring. On the first flight day the bees of one colony drift over to the colony alongside it, with the result that one colony will be too weak and the other too strong. When colonies are individually packed, each hive on a stand by itself, this difficulty does not occur.

Last winter we used with a great deal of satisfaction the Demuth inner winter case on a stand by itself. This costs only about a fourth per colony of the cost of the quadruple case per colony and yet gave us results that were fully equal to and in many cases better than we secured from quadruple cases, on account of the freedom from drifting. An ordinary ten-frame colony in September and October is squeezed down to seven of the best frames with stores; these are then stood on end in the Demuth case. This case of seven frames is placed vertically in three tiered-up ten-frame Langstroth hive-bodies. Packing material is poured in between. The hive-bodies act as a protecting case; and if one is producing extracted honey, he will have enough extra supers to house every colony he has, without any additional outlay. The inner Demuth case can be sold for about 75 cents, which, on the

basis of its lasting for ten years, costs $7\frac{1}{2}$ cents a year.

Figs. 11 and 12 give an idea of the Demuth principle; for it must be understood that Langstroth frames, instead of hanging in the hives in the usual way, are stood up on end in the case. The space above allows for giving a feeding of candy to make up for any shortage of stores, and at the same time allows room for the cluster to expand after the young bees begin to hatch out from the seven frames. By turning the frames up on end it converts the Langstroth frames into deep ones for wintering. Many good authorities have taught and still believe that a deep frame is better for wintering than a shallow one. I am convinced that a tall shaft, nearly square or round, as in a bee-tree, is a better shape for wintering than a shallow oblong brood-nest such as we find in the Langstroth hive. The Demuth case is similar in shape to the old box hives that often would surpass modern Langstroth hives for wintering. A cluster of bees in a tall chimney-like inclosure can fill the whole space; and when it is very cold the bees can crowd up into the top where all the warm air is. If there is a cake of candy on top to prevent starving at such times, the bees are in the warmest part of the inclosure where there is plenty of stores ready at hand. The scheme worked as pretty in practice last winter as in theory. It does away with all troubles of drifting, and, moreover, only requires half the stores of the two-story colony in the big cases. In these days of scarcity of sugar this is no small item.

While this Demuth method of putting up

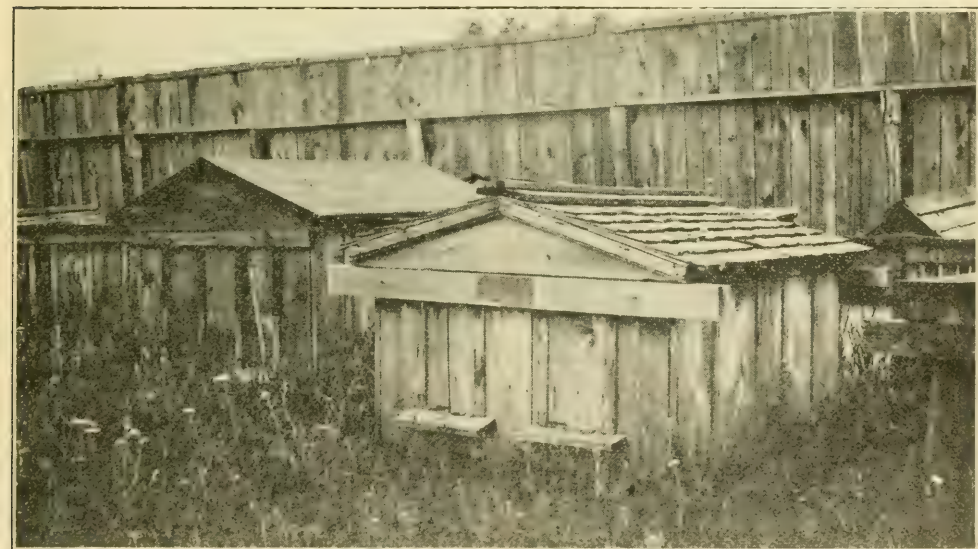


Fig. 9.—This represents a corner view of one of the outyards belonging to Ira D. Bartlett, East Jordan, Mich. These four-hive large packing cases are at least 25 years old. Mr. Bartlett was one of the first to use this form of outdoor wintering on a large scale, if we are correct, altho quadruple hives of a similar type are older. This same packing case is elaborately described in the A B C and X Y Z of Bee Culture. The high board fence shown in the background, says its owner, is too much of a good thing. It is too solid. In his opinion the fence would be better if the boards were spaced a little ways apart.

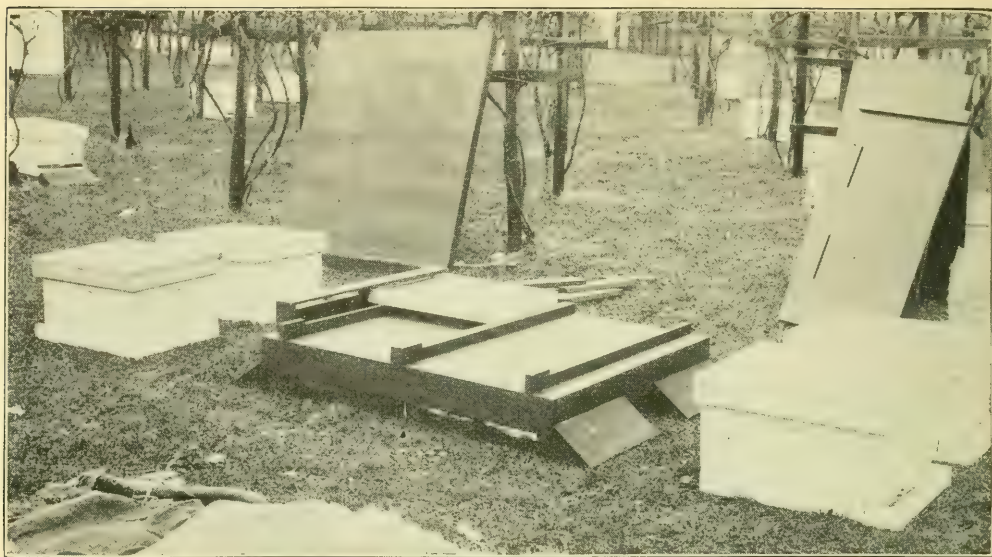
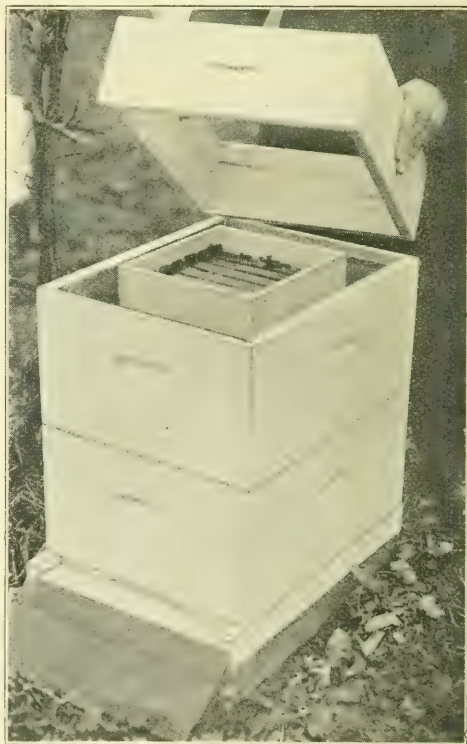
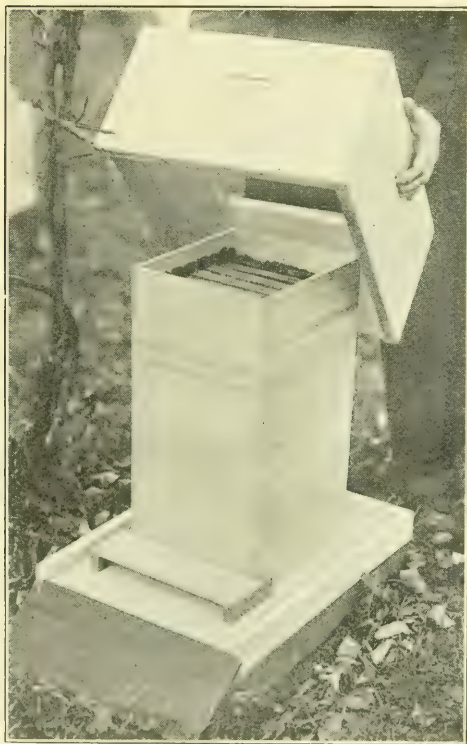


Fig. 10.—This is a general scheme for wintering four colonies in a large case. It consists of a platform on which are mounted transverse cleats to hold the four hives when placed back to back and side by side in close contact. The crosscleats should be wide enough to allow about four inches of packing between the bottoms of the hives and the platform beneath. Four panels then surround the four hives; and when in place they leave six inches of packing on the sides and ten inches on top. When the hives are two story in place of one, the four panels must be correspondingly deeper.



Figs. 11, 12.—These represent the scheme of wintering bees on Langstroth frames stood on end in an inner case. The hive-stand supporting the bottom is packed with leaves, to give bottom protection. The inner case is then put on top of the bottom-board when two regular hive-bodies and a super used during the summer are tied up around it as shown. A bridge connects the inner case with the outside of the hive to provide for entrance. Packing material is poured in between the inner case and the outer one.

bees for winter, in addition to the saving of stores, has the merit of cheapness, it requires attention on the part of the beekeeper in spring to give the bees more room. To do this necessitates unpacking them at a time when they ought to be warmly housed. The scheme of wintering a colony in double stories, four colonies to the winter case, has the decided advantage that the bees will have plenty of room for breeding up in the spring, and plenty of stores without additional care in the spring; and by the time they are unpacked in May there may be a colony with 13 or 14 frames of brood, bees occupying both stories, ready for any early spring harvest on fruit bloom, dandelions, or any other source. The large winter packing case, Dr. Phillips claims, practically eliminates spring management.

The objection to the large double-story four-colony winter case, besides the expense of \$3.00 per colony, is the amount of stores required—not less than 45 pounds to the colony, Dr. Phillips estimates; and when the beginner can get from 20 to 25 cents a pound for his honey, he wonders whether single-story winter cases would not be cheaper. If one is short of stores, and the colony not extra strong, the Demuth plan is much to be preferred. The expense of it is so light that any beekeeper who would attempt to winter his bees outdoors without any protection or packing, and then complain that his bees do not pay, or that he had had a poor season, ought to fail, and he generally does.

After a careful consideration of these different plans of wintering, we may say that

for weak colonies, the Demuth plan is greatly to be preferred. For those supplied with an abundance of stores, (if the price does not seem prohibitive) Phillips' plan would perhaps prove satisfactory. But this year the great majority of colonies will come under neither one of these heads and should therefore under present conditions be wintered in the cellar, if a suitable one such as described in the September Gleanings is available. If not they should be wintered in one-story winter packing cases in localities where the temperature frequently hovers around zero. In places somewhat warmer the standard double-walled hive will do very nicely, providing the clustering space is reduced to seven or eight frames. The vacant space on the sides should be filled with packing. This can best be done by using a division-board on the more exposed side of the hive and filling the space back of it with leaves.

In the next issue we shall have a discussion on the subject of entrances. There have been some new developments showing the value of a small one-hole entrance (always with the bottom packing)—a hole not larger than $\frac{3}{8}$ or $\frac{1}{2}$ inch for the cold part of the winter. In the fall or spring there are provided 2, 3, 4, or even 5 more holes to give extra ventilation. Be it remembered that the small-hole entrance will prove absolutely fatal to the bees without the use of bottom packing. The scheme of having a wide slot for an entrance for outdoor-wintered colonies is utterly wrong, both from the theoretical and practical standpoint, as we hope to prove in our next issue.



WITHIN THE WINTER CHAMBER

Conditions Needed to Keep the Hive Properly Warmed and to Prevent the Escape of All Important Heat

By Belva M. Demuth

THE quiescence, or slow living, by means of which bees may be able to span the broodless period of winter is usually present to the utmost degree during the milder weather of October and November in the Northern States. This extreme quiescence occurs after the last of the brood has emerged, and after all the recently emerged bees, as well as the older ones, have had ample cleansing flights, but before cold weather begins. If the degree of quiescence sometimes present at this season could be maintained thruout the winter, we would expect the bees to wake up the next spring, still possessing the full vigor of their youth and amply prepared for the burdens of their spring toil. The remarkable inactivity of autumn, however, is an unstable condition which is easily upset by various disturbing factors. The two giant disturbing factors are inferior stores and low temperatures. Either of these disturb-

ing elements, when working alone, slowly consuming the vitality of the bees, is bad enough; but, when both of them are present in consider-

able degree at the same time, they make quick work of their destruction. Winter activity resulting from poor stores can be prevented by feeding, after brood-rearing ceases, 10 pounds of good honey or a thick syrup made of granulated sugar (two or two and a half parts sugar to one part water) to each colony, regardless of the amount of stores already in the hive. (See page 530 of September Gleanings.) In the North this feeding should be done before the middle of October.

Winter Activity in Response to Low Temperatures.

In Bulletin 93, U. S. Department of Agriculture, we find a statement, with definite temperatures specified as follows: "At the temperature at which other insects become

less active (begin hibernation), the honey-bee becomes more active and generates heat, in some cases until the temperature within the cluster is as high as that of the brood-nest in summer. To sum up, when the temperature of a colony of undisturbed broodless bees is above 57° F. and below about 69° F., the bees are quiet and their temperature drifts with the outer temperature; at lower temperatures they form a compact cluster, and the temperature within it is raised by heat generated by the bees."

This is certainly a strong argument in favor of better protection against the cold of winter than most of us have been giving our bees. When we realize that they maintain a temperature never lower than 57° F. and are quiet and satisfied at temperatures between 57° F. and 69° F. (temperatures almost as high as that which we need in our living rooms), we can understand the need for a better housing of the bees during cold weather. When we remember the bitter cold and high winds of last winter, and how it was necessary to burn tons and tons of coal to keep our homes even above 60° F., we wonder that the bees were able to survive, when wintered out of doors, with muscular activity the only means of heating their homes. The month of October is pre-eminently the month for packing the bees that are to be wintered out of doors.

How Heat Escapes from the Hive.

The heat that is generated by the bees can escape from within the hive by two avenues only. (1) It may pass thru the walls of the hive by the comparatively slow process of being transmitted from particle to particle of the material forming the walls until it reaches the outer surface where it is either transmitted to the air and carried away or lost from the outer surface by radiation. (2) It may be carried out of the hive by air currents thru the entrance or other openings. The air currents may be caused by the wind blowing into the entrance, sweeping around and over the cluster, then out some other opening or another part of the entrance; or they may be weaker currents, set up within the hive because of differences of temperature there. Winter cases and packing prevent heat escape in the one case; contracted entrances, in the other.

Conditions Influencing Loss of Heat Thru the Walls.

Physicists tell us that the rate at which heat flows thru a solid depends upon four things only, which when put into terms of a double-walled beehive are: (1) material used for packing, (2) thickness of packing, (3) area of walls, ceiling and floor of the inner chamber, (4) the difference in temperature between the inner and outer surfaces. It follows, therefore, that we can decrease the loss of heat thru the walls by using better material for packing, by increasing the thickness of the packing, by decreasing the size of the inner chamber, and by locating the apiary in a sheltered place to keep the wind from cooling the outer

surface of the winter cases rapidly, and, at the same time, where the sun can shine on them to reduce or stop the outward flow of heat while the sun is shining.

Packing Material.

The material for packing should not be too coarse, such as straw, coarse planer shavings or forest leaves thrown in loosely, because such material permits currents of warmer air to rise and escape from the packing, thus carrying the heat away more rapidly. Also high winds may force air currents thru cracks in the outer case into and entirely thru such coarse material, rapidly carrying away the heat. Such material as wheat chaff, sawdust, fine planer shavings, or crushed and finely broken forest leaves, are perhaps about equally good for retarding the flow of heat. Sawdust will absorb and transmit moisture, if the winter case leaks.

Effect of Size of Winter Chamber.

Years ago when chaff hives and chaff division-boards were more commonly used, many beekeepers reduced the winter chamber to fit the cluster, filling the remaining space with these close-fitting chaff-packed division-boards. Present-day management is apparently going in the opposite direction, some beekeepers even using two hive-bodies for the winter chamber. The danger here is that some may increase the size of the winter chamber without at the same time increasing the thickness of the packing. Since every square inch on the inner surface may be considered as an avenue for the escape of a certain amount of heat, it follows that, if we double this surface without changing other conditions, we double the rate of the loss of heat thru the walls. To secure the same degree of protection when the surface of the inner chamber is doubled, it is necessary to double the amount of packing.

The Entrance.

The movement of air currents thru the entrance is influenced by its size and shape and the presence or absence of other openings in the hive. If there is but a single small opening, there is little opportunity for the wind to blow thru it into the hive, since air cannot enter unless air from the inside can escape at the same time. When the usual long, narrow entrance is used, wind may blow into the hive at one side of the entrance and force the warm air out at the other. A single small entrance, together with sealed covers, should prevent almost entirely the conveyance of heat thru the entrance by air currents.

The ideal condition toward which to strive is a winter chamber which fits the size of the cluster, or rather a cluster big enough to fill the winter chamber, so that the cluster touches and warms its walls, and these walls so well protected that it is not necessary for the bees to draw away from them in severe weather to form another wall of living bees as an insulating crust for the cluster.



CONVERSATIONS with DOOLITTLE

Caring for Comb Honey—How to Have in Best Condition for the Market

"Will you give us something further regarding removing comb honey from the hive, storing the same, and getting it ready for market? Remember many of the readers of *Gleanings* are not up in these things as are you old fellows who have kept bees for from 30 to 50 years."

A crop of fine comb honey may be greatly lessened in value by lack of knowledge or care in the harvesting, storing, and preparing for market. What I shall write will probably contain nothing new or startling, but a repetition of the things that some need to hear often to secure the best results when working for comb or section honey. After the honey harvest has been on a week or so the supers should be looked after, and, where the sections in any are capped over, they should be taken off and supers of empty sections given, if more room is needed. To have the honey in the best shape to sell, it should be removed from the hive as soon as it is capped over. The beautiful cappings are then white and very inviting to the eye. Remember that looks has very much to do with a fancy article of section honey. As the white-honey harvest in the Middle and Northern States is secured from white and alsike clover and basswood, less surplus room should be given as it nears its close, for by the contraction of space more sections will be completed than in the larger spaces, and we desire to get all the finest comb honey possible. At the close of surplus gathering from the above sources, all the supers should be removed.

For the best results in storing, a warm, dry, and airy room is essential. This room should have two windows so situated that the sunlight can be admitted, and a good circulation of air. The building should by no means be in the shade, for the hot sunshine and dry air of summer will, when in motion, do much to still better ripen the honey. The building should be one foot or more above ground and have a wood floor, and be so situated that the air can freely circulate all about underneath, so no dampness shall come from the earth below. Some suppose that the floor to a honey-house should be of concrete or cement of some kind, but this is a mistake. During the night, such a floor takes on the temperature of the ground underneath, and, when the morning sunshine and warm air strike this cool or cold floor, the concrete takes on a dampness, or begins to "sweat," as it is often termed. This in a great measure will overcome the warm, dry air we have planned to let in, and our nice combs of honey will soon begin to

"sweat" also, so that the nice white cappings will take on a watery appearance, which will be very detrimental to the looks. A strong rack should be made on which to place the honey, and preferably on each side of the room so that an alley-way can be had, as it will least interfere with the working room. This rack should be one foot above the floor, so the air may freely pass beneath it. A row of supers should first be put on, and on top of these, at the front and back, strips one inch square should be placed; and this should be continued in the same way until the space is filled to within a few inches of the ceiling, if necessary. All of the fancy should be stored in a body, No. 1, 2, and the dark the same, so that we need not have the different grades all mixed up when we come to getting it ready for market. At the time the honey is taken in, place it to one side, and the next morning, when it has cooled, clean off the propolis and wax from the supers and sections at top and bottom, so far as can be, and tier them up on the rack in their proper places. Storing the honey in this way, the warm air circulates freely all thru and between the supers and sections. The honey is thus left till time to prepare it for market. This is generally about the first of September.

To handle and case comb honey properly requires much care. The delicate combs are easily cut or bruised, and a little carelessness will result in leaky and dripping honey. The fancy honey is usually cased first, and the case labeled, "fancy." That not so white in comb is styled No. 1. That a little colored by the bees, and combs not so complete, is called No. 2. Then the buckwheat or fall honey may be cased in the same way as to grade, but it is very often put all together and styled as "dark." The honey in the cases of each grade should be uniform in looks and quality. The honey next the glass in each case should be no nicer than that in the center part. In other words, it should be cased so that to see the combs next the glass, as it stands in our honey room, the store, or commission house, may be an evidence of the quality of the whole case without further inspection. When honey is so put up, the purchaser, whether grocer or consumer, can take it and handle it comb by comb with satisfaction in selling or using. Every beekeeper has his own reputation to build or hold. If he expects good sales in the future, his goods should be as represented by the honey in full view in each case. The partially filled supers taken off at the close of the white harvest should be looked over, and all complete sections cased for sale in the grade best suited for them. Sections only partially filled should be massed in other su-

FROM THE FIELD OF EXPERIENCE

pers and returned to the hives at the opening of buckwheat or other fall flowers. At the "wind up" of the season, some of the partly capped combs may be sold to those who call and can see them, and prefer such at a lower price. Those not sold, or the whole of these partly filled sections, may be carried over to good advantage for "bait sections," as such are very useful in getting the bees at work in the sections at the very earliest opening of the flowers producing our surplus the next season.

Borodino, N. Y.

G. M. Doolittle.



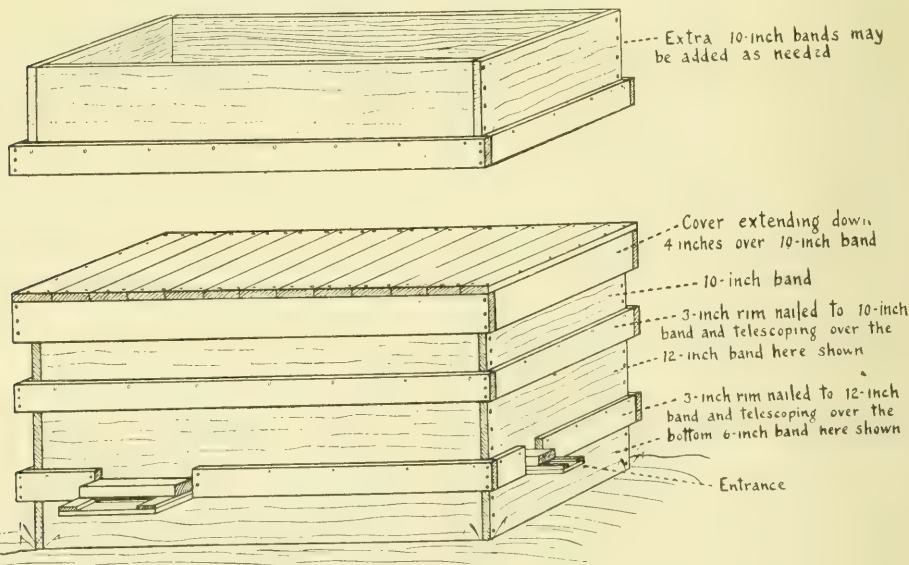
WINTER PROTECTION in the ROCKIES

How It Can be Accomplished at Comparatively Small Cost

There has been quite an awakening among Colorado beekeepers as to the need of winter protection, caused by the heavy losses sustained in the past, and the fact that the Department of Agriculture has, thru its bulletins and the extension work done by C. E. Bartholomew, carried on quite a campaign of education. Last winter a considerable number of Colorado beekeepers gave their colonies added protection in a variety of ways. Some simply covered the hives with a paper cardboard box, in which they packed straw or shavings between the box and the hive. Others protected their colonies in a more elaborate fashion by putting together the winter packing cases known as the Holtermann case. One apiary was pack-

ed single, each colony having a shell around it which was filled with straw, and a cover over this shell. Whatever method was used seemed to give fairly satisfactory results. One of the difficulties was that the beekeepers did not realize the necessity of packing their colonies early. In an apiary belonging to my brother, which he packed last November, the disturbance which the bees received while being packed started brood-rearing, and this continued thru quite a large part of the winter, and so weakened the colonies. However, last spring the few colonies which did breed during the winter seemed to be in pretty fair shape, altho not so strong as those that did not do any breeding.

The principal point that I notice in winter packing in Colorado is that the packed colonies have more honey by 10 to 15 pounds than those left in the open. In fact, it is a detriment to leave the hive full of honey when packed for the winter. It appears that it would be better to take away two or three of the combs of honey, replacing these with good empty brood-combs. In this way the colony will be able to maintain a more comfortable disposition of the bees in the brood-nest. The colonies that were packed last winter were also more uniform in strength; in fact, there were no weak colonies at all except those that had poor queens or had contracted foul brood. The protection of the packing case against molestation of bees from cattle, horses, sheep, pigs, etc. is not one of the least important features of the protection of bees. I believe this one



Corner View of Case
Chaff is used for packing material.

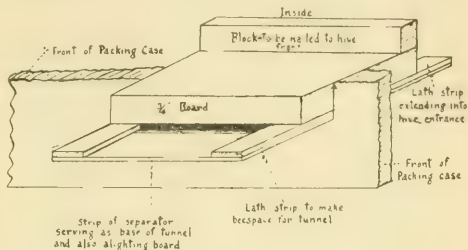
FROM THE FIELD OF EXPERIENCE

item will make the protection case a paying proposition.

Dr. Phillips advocates the necessity for wind protection. While it is doubtless true that there are days when the temperature is quite low, and when the wind is blowing rapidly enough so that wind protection would be valuable, this is not the rule in Colorado, especially in the eastern part of the State. When the wind blows here the temperature is generally higher. I think Inter-Mountain beekeepers would do well to locate their apiaries in a locality protected as well as possible and then add two or three inches of extra chaff packing to their cases rather than bother to build special wind-breaks. I think three inches of packing, together with the thickness of the packing-case boards and the hive-body, will give comfortable protection, even during a wind storm, provided the entrance is contracted to the minimum. Bees need very little air in the winter time, and the colony may be preserved by having a very small entrance.

There are two difficulties with the packing case that are probably the most serious ones to be met. With the use of so much straw or chaff, or even planer shavings, the danger from fire is greatly increased. One will need to be extremely careful at all times when using a smoker around these packing cases. Another objection is the fact that mice will doubtless make more nests in the bee yards, if they have these packing cases in which to build them. The least expensive method of constructing these cases and at the same time of producing the most effective results, has been on my mind

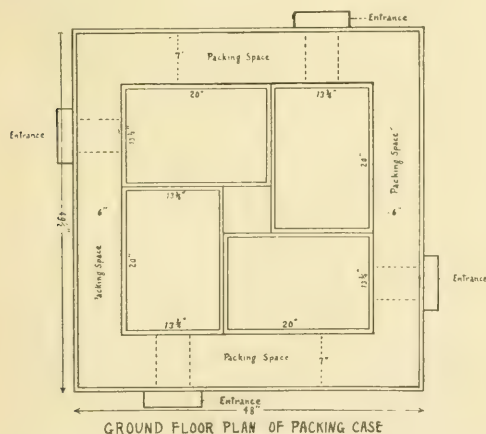
nies. In the Rocky Mountain region where we have slight rainfall thruout the year, I do not think it will be necessary to have a floor for the packing case. Simply put straw or chaff on the ground inside the walls of the packing case, using a hive-stand if thought desirable, but having this hive-stand packed with straw or chaff. The hives



may be placed right on the straw, but the disadvantage of this is that the straw may settle somewhat and disarrange your tunnel entrance thru which the bees pass from the hive to the outside. I have just finished making 60 packing cases for four colonies each, and am using flooring for the roof and common sheeting boards for the sides of the cases. I am making these cases high enough so that two hive-bodies may be used for a brood-nest before removing the packing. By the time the colonies have two hives filled with brood the weather will have become settled so that the protection from the packing will be less necessary. On account of our cool nights thruout the season, year-round packing will, I believe, eventually be adopted, and every beekeeper will do well to make his packing cases in such a way that the colonies can be manipulated easily without ever removing them from the case.

The accompanying drawings will explain the kind of a case that I have made so far, which will be found low in price and will certainly give the bees protection. If the colonies do as well in these cases as I have been led to believe, they will prove to be one of the best investments I have ever made. During the month of April we passed thru three cold snaps that seriously affected the breeding ability of the colonies, and I believe that I am safe in saying that protection of the colonies during the spring breeding season is of double the importance that it is during the winter, but there is no reason why the protection given the colonies should not serve both purposes.

One thing I have noticed is that beekeepers have protected their colonies on the top and three sides, and left the front exposed; or they have packed all four sides and top, and left the bottom exposed to the cold ground beneath. The bulk of the beekeepers who have given protection so far have done it in this half-hearted manner. Let us quit this way of doing and follow out the plan as suggested, so far as possible. Of course,



GROUND FLOOR PLAN OF PACKING CASE

for some time. When the cheapest grade of lumber is \$26 per thousand, this is a matter of much importance. The writer has not been able to secure a satisfactory grade of lumber for making packing cases for less than \$40 per thousand. This will make the cost of lumber alone for a case come to between two and three dollars for four colo-

FROM THE FIELD OF EXPERIENCE

we have to look to the expense, and my greatest objection to the windbreak for the bee yard is its cost. By adding three inches of packing space to the five inches, I believe I can quite largely make up for the lack of a windbreak, especially in this western county where it almost always warms up when the wind begins to blow.

One very great advantage of the packing case that I have not mentioned is the satisfaction the beekeeper derives from the knowledge that his bees are packed away snugly where there is practically no danger from losing any of his colonies.

Boulder, Col. Wesley Foster.

[If the beekeepers of Colorado will follow the suggestions given by Mr. Foster in this article, they will not only save winter stores but have much stronger colonies in the spring. A fair trial will convince any candid mind. The only criticism we might have to offer is that more importance should be attached to windbreaks or shelter. There should be no shelf or ledge under the entrance to catch snow or ice to clog it.

The scheme of having one entrance on each of the four sides is better in our opinion than having two entrances on each of two sides. The former will avoid drifting. See next issue.—Editor.]



THE ETERNAL PRICE QUESTION

How the Small Honey Producer Helps to Keep the Price Down. What the Price Should be

I ask myself the question and repeat it to my brother beekeepers: Supposing the wholesale price of honey to be 15 cents, why peddle it out at 12½ to 16 cents? Five one-gallon cans will cost more than one 60-pound can, and 10 six-pound cans, more than five one-gallon cans. A wooden keg will cost less than tin cans, and a barrel less than several 200-pound kegs.

It is all right to "look after our old customers," but yearly advertising is new advertising. I mean by that, unless you run an advertisement all the time, you have to look for new customers yearly. Not ten per cent of your "old customers" will remember you. Obviously it will not pay us to run an advertisement when we have no honey to sell, and it will not pay one man in a hundred to try to keep up a mail order business. Therefore, if we cannot get as good prices at retail, locally, as we can from the buyers, we certainly are foolish to lose one to three cents a pound by continuing our retail trade.

Prices depend on location—local retail prices, I mean. I am in a town of 100, and cannot expect to sell as much honey, locally, as the man living in a town of 500, nor can a person living in a town of 500 sell as

much honey locally as can a man living in a town of 1,000 or more. This admits of no argument. Then, too, it makes a difference where, in a town, the producer lives. If he has a store, as I have, he is well located to dispose of his honey advantageously; but in any community, if he be remote from the center of the town, or on a farm, his chances of selling are reduced.

It is said that "one farmer in eight now keeps bees," and "keeps" is right. Box hives, a salt barrel, a dovetail hive without foundation. But the point is here: They have actually started. They have bees. They produce honey, and as soon as they have a few pounds more than they need for their own table they sell it—at less than wholesale prices. The result spells lower local prices for the regular producer, the man with 50 to 400 hives or more.

I am anxious that we get the best price for honey that we possibly can; but location has much to do with prices. A very little advertising will sell honey in the city store, while a thousand dollars put into advertising would not sell \$1,000 worth of honey in this county. From experience in advertising I am positive of this: We small producers can get better than wholesale prices, the cost of containers added, in local sales. We can get about wholesale prices, containers and postage added, for mail orders. We can get about as much for 60-pound cans, f. o. b. home station, as we can get from jobbers, but here comes another problem: What are wholesale prices?

In a recent semi-monthly Market News Bulletin, U. S. Department of Agriculture, I found a range of 11½ to 22 cents a pound for "light amber" honey, an average of about 16c. So I ask again: What shall we honey producers base our prices on? Shall it be on 12 cents of the St. Louis quotation? If so, the Philadelphia price of 22 cents is too high.

It must be apparent to even the casual observer that there is a problem here which will take united effort to solve. I have no solution, altho I wish I had. Personally, however, I shall not sell honey at a price which is wholesale at my nearest large trade center, Chicago. Can I get more than that price and add the price of cans and, in mail order trade, the postage? These items make about three cents a pound to be added to the price of a gallon of honey, making it cost my customer \$2.16. My past experience tells me that I can get that, and more. At first I got \$2.25 in first, second, and third parcel post zones. Then I cut out the third, and finally got \$2.40. If I now had honey, I should try for 20 cents a pound, the cost of containers and postage added, and at that I'd be asking but about two cents a pound above the average wholesale price today, while in cities and large villages the

FROM THE FIELD OF EXPERIENCE

customers must pay 25 cents to 30 cents a pound. With honey, postage, and can added, my proposed price is but 20 10/12 cents a pound. Can I get it? Does anyone doubt it?

A. F. Bonney.

Buck Grove, Ia., July 25.

THE BEST KIND OF HYBRIDS

They May be More Prolific and Produce More Honey Than Pure Italians

It is enough to furnish many hearty laughs to go to a beekeepers' picnic and hear what the prominent speakers have to say, and later observe what said beekeepers do and how the speakers' advice works out in real life. For example, Prof. Ray of Cornell said:

"Don't keep hybrids. There is **nothing** good about them. They have foul brood, they are cross, and objectionable in breeding new stock."

Now, we will say that Professor Ray is a pretty good fellow, but he will have to amend his stock statements regarding Italian hybrid bees before I can admit that he sticks closely to the facts. Hybrids are not always all that might be desired, but in many cases the first cross of Italian and black bees (Italian queens with hybrid drones) results in wonderful production of bees and marvelous production of honey. At the same time, under the same conditions of weather and flowers, pure Italian bees of uniform three-band markings, gentle temper, and possible immunity to foul brood, may fail to gain a profitable surplus of honey, when hybrids produce good yields.

I have kept black bees, pure three-band Italians, goldens, and different varieties of hybrids for the last eight years, and, after making careful observations and tests in breeding these races, I maintain that there are great possibilities in operating with selected hybrids and quickly eliminating any queens as soon as they show their stock of hybrids are not up to a certain standard of prolificness, immunity to foul brood, and highest working ability in turning out large yields of honey. I have one hybrid colony which has produced up to date this summer 270 pounds of extracted honey, and this is far ahead of any pure Italian colony's record here. This hybrid colony has no foul brood, the bees show about 25 per cent jet-black workers, while the queen is a beautiful yellow, and her progeny are gentle when a small amount of smoke is used to handle them. So we may say, when it comes to hybrids, that circumstances often alter cases. My conclusion regarding this matter is that pure Italian virgin queens should be used, when trying to get hybrid stocks. Degenerate bee stock is usually the result of tolerating mongrel queens. The first cross

in breeds of poultry are known to be very prolific layers, and the same is true of bees.

Canastota, N. Y.

Clark W. Wilson.

WINTERING NOT DIFFICULT

Only Three Chief Principles—Why He Approves the Demuth Method

Sometimes I wonder if wintering is such a problem after all. I do not believe it is. There are just three things to bear in mind.

The first is vitality. We should plan on having a strong colony of young bees to pack for winter. But not all young bees have the requisite vitality. When buying queens one should make sure that the breeder is up to date in his methods, and not just trying to raise something with six legs and four wings, and that resembles a queen bee. Buying from such a man is like throwing money away. Pay the price and get the best.

The next factor in good wintering is stores. A colony will not consume a great amount during the cold weather; but it is in late March and April, when brood-rearing begins that they use the most. In this locality a colony should never go into winter with less than 25 pounds of stores. Thirty is better, as it makes it safer till fruit bloom.

The third condition is protection. Some prefer the cellar. I do not. I think that, if the Lord had intended bees to live in a cellar, he would have made one for them; but instead he gave them a hollow tree, and that brings a mental picture of the Demuth wintering plan, which, I believe, comes as near to being a perfect case as we shall ever get. Having the comb broad side to the entrance keeps out the wind; and putting a ten-frame colony on seven frames adds to the warmth. Also, by having the frames on end the bees can go higher up than when the frames are horizontal. And one need not worry about the placing of the brood in spring, as it will not vary much from the way it is placed in the frames when horizontal, since the queen starts to lay at the back of the hive; and with the upstanding frames she begins at the top end, so when they are unpacked the top end can be placed at the back of the hive, and it is just the same as tho they had been horizontal. But there are other good ways to pack for winter; and one is the double-walled or chaff hive. But we must bear in mind, however we pack for winter, it is very important to have several inches of good packing on top.

I think that, if beekeepers would bear in mind the importance of these three requirements—vitality, stores, and protection—their troubles and losses would greatly decrease.

J. C. Mosgrove.

Medina, O.

"OUR best beekeepers admit that a queen seems to prefer a large frame; and she will lay more eggs in one large card of comb than she will in the same number of square inches contained in two combs, one above the other, but divided from each other by a top bar, a bee-space, and a bottom bar, as is the case when the queen occupies two supers. We have yet to run across a beekeeper who denies this proposition." Page 522, September Gleanings. Well, I'm not going to be the first one to deny it; but, with the editor's permission, I arise to question its correctness. I have had a good deal of opportunity to see what a queen would do when asked to furnish eggs in two stories. Naturally I expected she would be a little slow in going up or down from one story to another, and that in some cases I should find no eggs or unsealed brood in one of the stories, and in most cases no very young brood. On the contrary, I found about the same condition as if the brood had all been in one story; so that, while I am not prepared to deny that a queen has any preference, I believe that preference is so small as to be quite negligible.

* * *

"The eight-frame Langstroth size of hive is going out so rapidly that we can almost put it among the discards," page 523, and the objection named is that "in tiering up it becomes necessary for the apiarist to stand on a box or stepladder to get to the top of the supers when the season is good and the queen prolific," the matter being illustrated on the cover page. I have never seen anything like that picture in real life, and I suspect that such cases are so rare that they hardly need be considered. A more serious objection is that in a hive so small there is always danger that in the fall the amount of stores in the brood-chamber may be too scant to reach thru winter and spring. [Referring to illustration on cover page of September issue, the thing is not "so rare" as you suppose. If it were now possible for you to travel over the country as we have done lately, you would see numerous cases like this of eight-frame hives. In saying this we do not mean there will be a whole apiary of such skyscrapers. The illustrations showing various forms of wind-breaks in this issue will give an idea of some of the yards we visited during the last two months, in Michigan alone. The pictures of R. F. Holtermann's apiaries show 12-frame hives. If you will count the stories you will get some idea of what he is doing. The picture of the David Running apiary also speaks for itself. The picture on our September cover was photographed in this yard by the Editor. The beekeeper who

STRAY STRAWS

Dr. C. C. Miller

travels little can have but slight comprehension of what the other fellow is doing, and the photographs do not always tell the story for the simple reason

that the traveling editors are not always on the spot when the best showings are given. The time was when the eight-frame hive was the leader; but the call for it is becoming so light of late that it is likely to become an odd-size hive.—Editor.]

* * *

Outdoor or indoor wintering is quite fairly discussed on page 523, only when the reader is told that in a cold climate the small beekeeper with only a few bees may winter in a cellar with a furnace, he may understand that the man with many colonies can not equally use a cellar with a furnace. I hardly think the editor meant that. Wherever the man with a few colonies does well with such a cellar, I should expect the man with many colonies to do a little better, because likely to have more experience.

But suppose the man with few or many colonies, in a cold climate, has no furnace in his cellar. In that case it will pay him to have a stove in his cellar, either in the room with the bees or in an adjoining room, not altogether—perhaps not chiefly—for the sake of making the bees warmer, but for the sake of having good air in the cellar. With the cellar warm enough it is easy to ventilate; indeed, in very severe weather there may be enough ventilation merely thru the cracks and crevices of the cellar walls, if the temperature in the cellar is high enough. In a cellar too cold for best results, running up the temperature occasionally to 60 degrees or more may be a good thing; but, of course, it is better to have an even temperature of about 57 degrees. [When we spoke of 57 degrees we had in mind the internal temperature of the cluster, at which point the bees are the quietest. You evidently have in mind the temperature of the cellar itself. The average beginner, if he thought 57 degrees was about right, we are afraid would be led into trouble. Again, we believe it is rather dangerous to give it out to the general public that it is wise to shoot up the temperature "occasionally." As a general thing, the ordinary house cellar will have too much variation.—Editor.]

* * *

We are told to have in the hive abundant stores in the fall, not only to last them thru the winter, but thru the spring, as it is better to have the honey ready there in advance than to disturb the bees giving it to them in the spring. There is another reason, likely more important, for having a goodly store of honey in the brood-chamber thru the winter. It serves as a sort of balance wheel, equalizing the heat. In ordinary

weather the honey is warmed up to something like the temperature of the brood-nest. Then when the thermometer takes a sudden plunge away below zero, the bees with a big lot of honey do not get the full effect of it, because the heat that has been stored up in the honey is slowly given out; and it seems that such a colony should stand the shock better than the one with empty combs. Then, too, the presence of unlimited stores in early spring seems to have a sort of moral effect. As Doolittle expressed it, the bees say, "There's millions at our house," and they go at the rearing of brood without reserve.

* * *

It seems to be an understood thing that a few colonies of bees will winter in a cellar better than a large number. If the cellar is a little too cold, the larger number of colonies will generate more heat, and why shouldn't they winter better than a smaller number? Or, to put the question in more general form, why will a small number of colonies winter better in a cellar than a large number? I'm not sure I ever saw that question answered. Just now, I can think of no other reason than that the air is purer with the smaller number. If that be the true reason, then it would seem that the larger number should do just as well as the smaller, if by any means the air be kept just as pure with the larger number. I am strongly of the opinion that such is the correct idea. It is somewhat doubtful whether beekeepers in general are awake to the importance of good air for bees. I suspect that wrong temperature in cellars is not so much responsible for bad wintering as wrong air. [We agree with you most emphatically on the importance of having plenty of fresh air when the temperature goes above 50. The probabilities are that too much emphasis has been placed upon the advantage of air when the temperature is down to 43 and 45. When the mercury goes up to 60 then it is that the bees require a great deal of air. Better keep the temperature down to 45, if possible; but, if not, give plenty of fresh air.—Editor.]

M. C. Richter talks some good sense at page 544, especially when he says: "Colonies at this time which have yielded 50 per cent or less of the average yield per colony in an apiary by all means should be requeened as soon as possible." Never was this so important as now, because honey was never so high in price as now. Even supposing honey is sold at only 15 cents a pound, and supposing the average yield of the apiary is only 60 pounds, let us see how it will figure out. The colony that yields only 50 per cent is 30 pounds shy of the average, and that 30 pounds at 15 cents a pound will bring \$4.50. If \$1.00 is paid for a queen that will bring up the colony to the average, that will leave the beekeeper \$3.50 to the good—a matter worth considering. Let us, however, consider something

more nearly the actual, altho conservative. Let us suppose the average is 100 pounds, and the price 20 cents. In that case a shortage of 50 per cent will amount to \$10.00. Wouldn't it be good business to advance one of those ten dollars for a new queen? But that's not all of it. If that poor queen is left undisturbed, her influence will continue into succeeding years, and not the least of the mischief she will do will be to furnish scrub drones for forthcoming virgins.

I think Mr. Richter would agree with me in going still farther, and advising that every colony which falls below the average, whether it be 50 per cent or only 5 per cent below, should be marked for requeening just as soon as convenient, and then requeened with a queen that will not only bring the colony up to the average, but above the average. And then having on hand bees of the best stock, he will rear his own queens, keeping constantly in mind the slogan, "Breed from the best."

* * *

Speaking of getting rid of laying workers, this is said on page 554: "Another method that is sometimes employed is simply to take the hive several rods away from the apiary and shake the bees onto the ground and then return the hive to its original location. The workers will return to the hive, but the laying workers can not find their way back and will be lost." It is not always wise to combat cherished traditions; but, if the editor will obligingly take the witness stand, I should like to ask a few questions. As all workers are believed to mark carefully the location of the hive upon taking their first flight, and as the queen does so with equal care, do you believe that a laying worker never marks the location of its hive? If it does so, why should it not find its way back to that hive? Considering that a large number of workers are engaged in the disreputable business of laying eggs, and that consequently each laying worker can lay only a comparatively small number of eggs, do you believe that a laying worker, like a queen, is limited to laying eggs as its sole business? Do you know that a laying worker is not in the habit of going afield for nectar, just the same as other workers? Do you know that dumping at a distance from the hive the bees of a laying-worker colony will have any other effect than to lose the bees too young to have yet flown, if any such young bees be present? [We, together with the rest of the beekeeping fraternity, are obliged to confess considerable ignorance concerning laying workers. We do not know whether laying workers ever mark their locations or not, nor could we swear that laying workers never gather nectar, altho we seriously doubt it. But we do know that we have often eliminated laying workers by simply dumping the bees at a distance from the hive and then introducing a queen-cell or queen; whereas, if introduced directly, we have frequently met with failure.—Editor.]

WE are having the best yield of goldenrod honey I have ever known. Colonies that were very short of honey the middle of August have gathered enough for winter. It will help solve the winter-feeding problem and save many tons of sugar.

* * *

J. L. Byer says on page 548, September Gleanings, "if you have no buckwheat in your locality or other fall sources of honey," etc. Other writers seem to consider buckwheat as well as goldenrod, asters, and Spanish needle as fall flowers, yet the buckwheat blooms in August and has gone by before the middle of September. Goldenrod comes a little later, but that too has mostly gone before the sun has crossed the line. The aster began blooming the last of August with us this year, and may last for a month or until October. We also have some second blooming of sweet clover, that may last until the ground freezes; but our main sources of late honey are buckwheat and goldenrod that come before the autumnal equinox. I have been wondering if we would not be nearer right, if we were to call these later sources of honey late summer bloom rather than fall flowers, as we have been accustomed to do. Maybe, after all this is only a question of "locality."

* * *

I cannot help envying young beekeepers when I see and read the many things, helpful information especially, found in our modern bee journals. Take the matter of cellar-wintering discussion which the September number of Gleanings contains. I have been figuring up how much more it has taken in honey or sugar syrup to winter my bees out of doors than it would if I had begun with a good cellar and stuck to it thru all these years. I have been keeping bees. Well, I find it has taken some 200,000 pounds or more of honey or its equivalent of sugar to winter my bees than it would, had I wintered in a good cellar. Enough to make a poor man well off! We think of the cost of a good cellar or repository in a sidehill, yet to winter 500 colonies out of doors this coming winter will take at least 5,000 pounds more than in a good cellar, which at the present price of extracted honey would amount to the snug sum of \$1,000—enough to build a pretty good winter home for the bees, and then it would be just about that much saved from year to year.

* * *

Dr. Miller says, page 538, "It is a good plan to put wet cappings down cellar to drain." Well, that is one way; and another is to soak them out in water and drain it off and feed to bees. However, I believe I

SIFTINGS

J. E. Crane

have a much better way than either. After most of the honey has drained out, I melt the cappings and run them thru a wax separator. The wax runs out in-

to one vessel as clean and pure as you could ask for, and the honey into another, while the dirty wax can be taken into still another—a great improvement over carrying cappings into a cellar. All the honey and wax are saved, with the least possible amount of work.

* * *

Dr. Miller and C. A. Aeppler appear to disagree as to the source of vitamins, page 537. Dr. Miller thinks they are found in the honey, while Mr. Aeppler is equally sure they are found only in pollen. Now, whether Mr. Aeppler is right or otherwise, it seems very doubtful that we shall ever be able to persuade people to eat pollen for the sake of the vitamins it may contain. If Mr. Aeppler is right, Dr. Miller is also partly right, for nearly all honey contains more or less pollen.

* * *

The Editor of Gleanings tells us on page 522 that the movement in favor of a large brood-chamber is quite general, and that eight-frame hives are going out of fashion. I wonder if this is not, in part at least, the result of beekeepers turning their attention more largely to producing extracted honey.

* * *

"The cage that will do it," page 351! I am glad, for a safe and sure way to get bees from the South in spring is going to be a matter of great importance in the future, I believe, as there is likely to be a shortage of bees here in the North in the spring for many years to come.

* * *

Those hives with supers on cover page of September number of Gleanings look pretty good. Lots of work to brace up a lot of hives in that way, did you say? Maybe, but it will pay if the bees will fill them.

* * *

There has been an unusual call for honey this season, many persons coming from a distance in automobiles and taking a supply back with them.

J. E. Crane in April Gleanings seems to think Weaver wants to sow sweet clover on other people's land. Well, that may be; but almost anybody would consent to a person's sowing the railway right of way. As to the railway companies, they have no option in the matter, as all plants on the right of way belong to the de facto owners of the land itself who pay the taxes on it. The same rule applies to county highways. In short, first find limy land, and then ask the owner for permission to sow.

Battlecreek, Mich. Chas. A. Johnson.

Conditions brought about by the war have so greatly increased the problem of feeding one's family wisely that we housekeepers need every bit of help we can find. What makes our problem doubly hard is the fact that it is our duty not only to feed our families a balanced ration but to try to feed them no more than is needed to keep health and strength at the maximum. We are all rejoicing that the food crisis of last spring, when it looked as if Germany might actually succeed in starving England and France into submission, is over. But altho our bountiful wheat harvest and the wonderful increase in ship-building have made food conditions so much easier for our allies for the present, we must remember that the constantly increasing drain on our man-power is going to cut down on food production more and more as long as the war lasts. Those who are in a position to know tell us that we cannot expect future harvests, while the war lasts, to equal that of this year for lack of farm labor.

The Food Administration tells us that we must build up a reserve for the "lean years" that will surely come, if the war goes on. That is the reason we must still buy 20 per cent substitutes with our wheat flour and why we must persist in not allowing an ounce of any kind of food to be wasted.

OUR FOOD PAGE

Stancy Puerden



chen in the country, it would help us feed our families well and wisely in spite of high prices.

Notice that the first two groups are made up of foods which are mainly for the purpose of body-building, while the fourth and fifth groups are fuel- or energy-yielding foods. Between the first two groups

and the last two comes group three, the cereal foods and their products. This is truly a "middle" group in that it shares the properties of the groups which precede and those which follow. In other words, the cereals are valuable sources of body-building foods and are sources of energy as well. Do you wonder that bread has been known as the staff of life?

Now most of us know that a balanced ration should contain foods from all the above five groups. And yet, now that prices of foods have mounted to such extreme heights, we are apt to feel that we must spend our food allowance for the cheapest sources of body-building and energy foods, the cereals and their products, and the legume seeds, peas and beans. For this reason many housekeepers do not provide enough of foods from group one, especially city housekeepers. Another food which is too apt to be neglected in these times of

The Five Food Groups.

Group I	Group II	Group III	Group IV	Group V
<i>Fruits and vegetables.</i> Important sources of mineral substances.	<i>Milk, meat, meat substitutes, meat savers.</i> Sources of protein.	<i>Cereals and their products.</i> Starchy foods. Valuable sources of energy and protein.	<i>Sugar, sugar substitutes and savers.</i> Supply energy in readily available form.	<i>Fats and fatty foods.</i> Supply much energy.
<i>Vegetables</i> Spinach Lettuce Cabbage Celery, etc. Salsify Potatoes Carrots Onions, etc. String beans Green peas Green corn Okra, etc.	Milk Cheese Eggs <i>Meat</i> Beef Mutton Pork Veal, etc. <i>Meat substitutes</i> Fish Oysters Clams and other sea food Some legumes <i>Other protein-rich foods</i> Beans Peas and most other legumes Nuts	<i>Grains</i> Wheat Rye Corn Rice Oats Barley Grain sorghums Buckwheat, etc. <i>Grain products</i> Flours Meals Cereal breakfast foods Macaroni, etc.	<i>Sugars</i> Cane sugar Beet sugar Maple sugar Milk sugar <i>Sugar Substitutes</i> Molasses Honey Glucose Corn syrup, etc. <i>Sugar-rich foods.</i> Sweet fruits, fresh and dried Jams Preserves Candy, etc.	<i>Fats</i> Butter Cream Lard Drippings Seed oils Nut oils, etc. <i>Fat-rich foods</i> Fat pork Bacon Suet Oily nuts, etc.
<i>Fruits</i> Apples Plums Grapes Oranges Berries, etc.				

The table given below of the five food groups seems to me the best and most sensible that I have ever come across. If a copy of it were pinned up in every kitchen in the country, it would help us feed our families well and wisely in spite of high prices.

high prices is milk. Many people regard milk merely as a beverage and feel that they cannot pay a high price for it when the money should be spent for solid food. As a matter of fact, milk is a much more important food than meat, and, considering its food value, is cheaper. It will do us no harm to cut down on the amount of meat or even go without it altogether, but we should never reduce the amount of milk, especially for growing children. Milk comes near to being a perfectly balanced ration, containing the proper proportion of protein, fats, carbohydrates, and nearly all the necessary minerals. In addition it contains both classes of vitamins, or, as it is the latest fashion to call them, the two "unknown essentials."

In many parts of the country farmers have been reducing the size of their dairy herds because people have been unwisely cutting down on the amount of milk used. The great nations of the world have been the nations who have used plenty of milk. Buy whole milk rather than cream and use the skimmed milk for cooking purposes. One quart of milk every day for every child in the family is none too much. This amount includes that used for cooking.

The food administration has recently issued a list of what it calls "protective foods."

Brussels Sprouts	Lettuce
Cabbage	Milk
Cauliflower	Onions
Celery	Spinach
Collards -	Swiss Chard

We are told if we shall include some of these in our diet every day, we shall be sure of getting enough mineral matter. I suspect this is a case of speaking one word for mineral matter and two for the growth-promoting vitamin "fat soluble A," for all these foods are rich in the latter substance.

A Timely Subject.

"Sweetening," or rather how to get enough of it, is occupying the attention of food writers to the exclusion of nearly everything else just at present. Everyone is looking for a sugar substitute. Aren't you glad you married a beekeeper, Mrs. Subscriber?

Between you and me, it makes me quite cross to have honey called a "sugar substitute," especially when it is placed in such company as it is in the above table of food groups. Sugar is a man-made substitute for the only concentrated sweet devised by the Creator, honey. When I hear people call honey a "sugar substitute," I tell them honey was used thousands of years before a sugar refinery was even thought of.

Dr. Miller tells us on page 537, September Gleanings, that a Mr. Aeppler in the Beekeepers' Item expresses a doubt of there being vitamins in honey. I never before

heard of Mr. Aeppler, but judge he must be from Missouri. However, I do not believe his views and mine are so far apart. When he talks of vitamins in pollen he evidently means the growth-promoting vitamin, soluble in fat. I never made the claim that this class of vitamins is in honey, and I agree with Mr. Aeppler in believing that it probably is in pollen. I made the statement that it is the vitamins, soluble in water, which are in honey, and I am by no means ready to recant. When I began to read up on vitamins I was struck with the fact that the class soluble in water seems to be present in practically all natural foods, and, as honey is not subjected to any milling or refining process to rob it of any of its constituents, it seemed reasonable to assume that it contained vitamins. I therefore consulted chemists and food specialists high up in their profession, and when I found that they were practically unanimous in agreeing that honey is a vitamin container I took the Gleanings readers into my confidence.

Research work is constantly going on in regard to these interesting "unknown essentials," and it is difficult to "prove" anything about them

as yet, altho it is pretty well established that their absence in the diet makes all sorts of trouble. I believe I am correct in saying that no chemist has succeeded in isolating them up to date, altho many are endeavoring to do that very thing.

Just at this point my grown-up nephew, also much interested in honey, happened to be crossing our lawn, and hearing the click of my typewriter, came to the window and asked me if I would like to sample some ice cream. He had ordered it for a dinner given by the A. I. Root Co. for its foremen, and he said there was some to spare. It was from the largest ice-cream makers in Cleveland, and was made by substituting an equal weight of honey for sugar in one of their regular recipes. (There I used the word myself, didn't I? In talking about using honey in recipes it is difficult to avoid it.) You never tasted ice cream of a finer texture or a more delicious flavor. The honey flavor was not prominent, as vanilla was also used, but it certainly added a delicious taste which is hard to define. I am going to try some honey chocolate ice cream, as the Puerdens are very fond of the combination of honey and chocolate.

While we were staying at a cottage on the Lake Shore a few days, we ran out of sugar and could not obtain any there as our sugar card was back in Medina. For that reason I experimented with honey as a sweetener for sliced peaches and found it delicious, and the rest of the family agreed with me. Don't put on too much when you try it, as the peach flavor should not be smothered in sweet of any kind.

"Mary had a little bee,
'Twas worth a lot of money;
For when the sugar bowl was cleaned
She substituted honey."

WE have spoken, all of us, of the fraternal spirit among beekeepers, the friendliness and all-of-a-family sort of feeling that draws them one to another. And among the letters that have dropped in on me from fellow beekeepers, some of them, by coming from lands across the seas, do bring that particular quality very close home. In a friendly note from New Zealand, I find these words, "I want you to know that we beekeepers in this Dominion, that is generally known as 'God's own country', have a very warm place in our hearts for all of our craft, wherever they may be, and particularly those of our blood and language across the water." And in a charming letter from one of the editors of the "Yoho no Tomo," the monthly Japanese bee magazine, there is plainly evident that same spirit of fraternity. And, by the way, the name "Yoho no Tomo" means "The Friend of Beekeepers." Isn't that a captivating name?

Unfortunately, tho, the magazines that were mailed by these two friendly-spirited gentlemen, one from New Zealand and one from Japan, failed to reach me. War conditions doubtless had much to do with it. But I was disappointed, of course, for they both would have been so interesting—the one thru what I could read, and the other thru what I could not. And as I have never seen one of my own verses in a foreign language, I was very curious to see one in Japanese, as I was told I should in the "Yoho no Tomo." In that letter itself was a Japanese poem, inscribed in the Japanese characters, that look so mysterious to us who do not know them. But it was courteously translated, and there again was the same brotherhood of beemen in the little Japanese poem, for it told of the writer's attachment to the "far, far America" he has never seen, because America, too, keeps bees.

And then, just lately, came a letter from the "Australian Imperial Forces, on active service, abroad," with these words as part of it. "We are near the 'line,' and tonight the sunset was glorious. One of the boys mentioned bees, staying out to see it. * * * I 'keep a bee' in Queensland, Australia, and am an enthusiast who has great hopes of the industry, and great love for all connected with the bee, and who feels the warm grip of 'hands across the sea' that seems to come to those who are fortunate enough to have the song of the worker ringing in their hearts and lives. Am on my way to help in France. Hope I will soon have the good fortune to return to my beloved Australia."

Can't you see them over there "near the line," watching the sunset and talking

Beekeeping as a Side Line

Grace Allen

about bees and home? Then later in the letter he speaks of his plan to visit the United States with One Other (this isn't telling, is it, when I don't

give his name?) after he gets home and they are married. And don't we all most fervently wish him great good fortune over there in France, and a speedy safe return, and the full realization of all of his dreams? Indeed we do.

Then out of the friendly thoughts of one of our own American beekeepers there recently dropped into my life a most ingenious box for hunting bees. It is all cut and fitted and fashioned most perfectly and with great dexterity and skill. And a delight of a hive tool from another—and it all means friendliness, simple great-hearted friendliness, one of the biggest and best qualities God has put into human souls.

This spirit does not stop with letters and graceful gifts, however; it goes on out into practical helpfulness. Most generously, in all places, year after year, do veteran beekeepers give of their experience and learning to those just starting in the work. Once, to be sure, a beekeeper said to me in a letter that it was an old saying and true that "those who tell do not know and those who know do not tell." But I don't believe it about beekeepers. Doubtless those who tell do not know everything, and possibly there are a few who know valuable things they will not tell, but I doubt that the most of those who know a great deal hide the light of their knowledge under a bushel of self interest. Think of the big men who stand head and shoulders above the rest. How freely they have given of the fruits of their experience and observations, from Dr. Miller down. "A good beekeeper and sort o' soft at the heart, too. So a lot of beginners go to him to get started goin' right" was how M.-A.-O. recently spoke of one. Of all this big-hearted feeling and generous spirit manifest by the beekeepers of the land, and of the world, I for one feel particularly proud.

* * *

The Tennessee Beekeepers' Association held their annual Field Meet on the campus of Peabody College, Nashville, on Thursday, Aug. 22. It had been hoped that Dr. Phillips, who was prevented by weather conditions from being with us last winter, could be at this meet; but this time he was detained by important matters, so we shall wait again for some more favorable time. It was not a big meeting, about 25 in all, but it was very pleasant, sitting there under great shady trees, talking about bees. Nearly everybody told freely what he did, and when, and why, and what he thought the best way to do it. Rev. R. S. Scatterfield,

former secretary of the Oklahoma Beekeepers' Association and now residing in Nashville, gave a most entertaining account of his own experiences and told interestingly of beekeeping in Oklahoma. As usual, Mr. Buchanan became the center of a volley of questions, and as usual answered them all fully and freely and helpfully. There was a general lament over the harrowing combination of a very short crop and unheard-of high prices. Samples of honey were passed around and compared. If there had been a prize, it would unanimously have been given to Mr. Ellis' sourwood honey. All the talks were informal and brought out animated discussion and comment. Spring management and wintering were the favorite topics for argument. For the most part, even last winter's losses were not heavy enough to usher in a general trial of complete winter packing, for this fall. One man is at work making chaff hives for all his bees. Others reported good success from top packing only, some over burlap, some over sealed covers, and plan to continue with this. Others use nothing at all, not even entrance-contractors, and plan to continue with this. But great stress was put, almost unanimously, on the necessity of young queens. Requeening every year was advocated by some. "But if you've got a hundred colonies or more, that's some job," protested one beekeeper. Half one year and half the next, then; or just requeen those that seem to need it, were among the suggestions in reply. (Personally I seriously question the wisdom of the latter course. A queen may show no signs of failing this summer, and yet have lost enough of her vigor so that a younger one would be much better for next year.) Some brought picnic lunch and others lunched in the college cafeteria. And when we parted at the end of the day, no one had learned any wonderful get-rich-quick method of honey production, but each one carried away the memory of a friendly group under great old trees, the fresh touch of other minds and a definite stimulus towards better beekeeping. Which is what field meets are for.

Speaking of requeening, hunting queens is a job sometimes. Those few colonies we bought this spring ran to blacks and hybrids, and I shall never forget the time I had finding their dusky royalties. Over the frames I hunted as I set them out, and over the frames I hunted as I set them back. Then I did it again. Then I sifted them, smoking them down thru an excluder. And mostly I found her, but once I lost her and once she flew away. I certainly should hate to requeen a whole yard every year, if they were of that complexion and of that disposition, the bees running wildly over the combs and bunching and dropping off, the queens themselves running and hiding, and everybody acting wild and flighty and nervous. Perhaps, tho, the resulting spirit of exasperation makes the execution itself less

difficult. Most Italians, on the other hand, are so quiet when their hives are opened that the queen is seldom difficult to locate, almost never gets excited and often calmly goes about her laying while the comb she is on is taken out and examined. Then requeening is comparatively easy. Yet it is hard then in another way. Is it squeamish and womanish to admit how hard it sometimes is?

In June we found our bees working most industriously in their new country home on a rather tall weed with which we had no previous acquaintance. Every effort of our own to locate this weed landed us squarely in the Mint Family. Yet we didn't dare stay there, because according to Gray the seed-like nutlets of the Mint Family are never prickly. And prickly these surely were. About three feet high the plant was, with a square hollow stem, simple leaves opposite each other on the stem, and light purple flowers, that I should call 2-lipped, at the axils of the leaves, and running at the top into terminal spikes. Sounds like the mints, doesn't it? But there were those prickly little seed suit-cases. Does anybody know what it is? Next summer, if the bees crowd on it so thick again, we'll get its name and family connection, if we have to send it to some authority for identification. Not that there was much of it, but the little clump by the old shed had always several bees on each stalk, and that roused our curiosity and interest. And a beekeeper's curiosity and interest, once aroused, are hard to quiet with anything less than the fact.

Quite a good many beekeepers this year ran their bees, or part of them anyway, for increase. This accounts in part for the poor crop, but even those that were run solely for honey produced very little surplus. Scanty nectar in the white clover, and the long drouth, quite spoiled the season. But isn't there another year coming?

I am in receipt of a bulletin entitled "How to Keep Bees," issued by the Entomological Department of the State Board of Agriculture of Rhode Island. The bulletin was written by Mr. Arthur C. Miller, and it is undoubtedly one of the most able and concise treatises on the subject I have ever seen.

A PICTURE.

A group of soldiers near the line—
A flaming sunset glory
Whose beauty gently silences
Careless laugh and story;
Then thru the silent beauty, bees
Go drifting with their plunder,
Trailing memories and hopes
Across the golden wonder.

"We've bees at home," a soldier says,
"I've watched them go and come
A million times, and in the spring
I've listened to them hum.
When I go back and marry Sue,
I'll have some apple trees,
A garden and a climbing rose
And seven hives of bees."



FROM NORTH, EAST, WEST AND SOUTH



In Northern California—Ordinarily August is one of our best, if not the best, month for honey production in our entire section. It is unfortunate, especially under existing war conditions, that so little honey has been produced during the last month. The weather was cool and not conducive to nectar secretion until the latter part of the month. September gives promise of a light fall flow. The last extracting of alfalfa is practically all off the hives, and the crop this year is one of the lightest in the history of the valley, despite the fact that beekeepers everywhere made every effort in point of numbers and condition of colonies to secure a large yield. During September we expect to produce several cars of light-amber and amber honey from fall bloom on the plains but nowhere the number of cars that we harvest from this source during a normal season. There is now a fair flow from the star thistle in the northern part of the valley, but the bees there are in such a deplorable condition on account of disease that the production from this source will not be large. The honeydew flow along the rivers is likewise very disappointing. Usually this honey makes its appearance in either June, July, or August, but this season the flow did not commence till the beginning of September, and we do not anticipate more than three or four cars of this dark honey. There is at present a very heavy demand for this grade among buyers. At any time from now on beekeeping weather may take a turn for the worse. A cold snap or early rains may set in and shut off the flow for the balance of the season. In view of this fact we can not emphasize too strongly that the practice of extracting honey close is a most unwise policy to follow. Furthermore it must be remembered that at the present time it is practically impossible to secure sugar for feeding bees. In the event of a poor spring next year no beekeeper has a legitimate reason to ask for sugar for feeding purposes, if he made it a practice to extract clean before the fall flow.

It was pointed out in August Gleanings that on June 26 steps were taken to formulate the California Honey Producers' Co-operative Exchange. This Exchange was incorporated on July 15, and the temporary officers named on June 26 have been permanently elected. On the day of incorporation the State Exchange drew up an agreement between themselves and the various local exchanges embodying the following principal objects and purposes:

To promote, foster, and encourage the production, distribution, and consumption of honey and other bee products, thru standardization, uniform grading, proper advertising, the extension of markets, and all other legitimate means.

To prepare honey and other bee products

for market, and to manufacture all articles in which honey or bee products may be used.

To lessen the cost of marketing and production by creating central agencies to represent the State and the local exchanges in the co-operative marketing of their products and the purchase of supplies, and by disseminating information concerning all pertinent matters, the maintenance of our advisory legal department, the handling and adjustment of damage and other claims, the collection of the proceeds of sales and otherwise.

To secure for all producers, and all local exchanges, fair and just representation in marketing and all other matters in which there may be a joint interest, under fair and equitable rules, to be determined by the parties in interest, with due regard to the volume and value of the product of each and of the number of producing colonies of bees owned or controlled by each producer; and, while uniting so to do, at the same time to preserve the independence of each.

To provide all facilities to its members, and the local honey producers' exchanges represented by them, at cost, prorated according to volume and value of business, under equitable and uniform rules.

At the present time eight of the ten locals are parties to this agreement. The membership of the State Exchange consists of two beekeepers duly chosen by each local exchange. These members constitute the State Exchange and it will be seen that each local exchange has equal representation and voice in the conduct of the parent organization. The four local exchanges in the northern part of the State are all members of the State Exchange. The names of these organizations and the respective members of each are as follows: Central Valley Honey Producers' Co-operative Exchange, M. C. Richter and W. W. Thompson; Superior California Honey Producers' Co-operative Exchange, Oliver Parks and B. B. Hoga-boom; Inyo Honey Exchange, W. A. Trickey and A. Shelly; Southern Valley Honey Producers' Co-operative Exchange, C. W. Tompkins and Robert H. Ellithorpe.

Modesto, Calif.

M. C. Richter.

* * *

In Southern California—Your southern California correspondent is now writing from a point at the headwaters of the Bishop Creek branch of the Owen's River, Inyo County. I am 21 miles from a post-office and it may be several days before I can get to mail this. I was at an elevation of 12,000 feet yesterday and found small black bees working on the scant flora to be found on the poor granite soil. If these bees can manage to live, then would the strain not be valuable for hardiness? No bees are kept within at least 15 miles, so these must have been the



FROM NORTH, EAST, WEST AND SOUTH



result of swarming several times and going farther into the mountains.

Today I spent a very pleasant hour with Muth Rasmussen of Independence. For 35 years he has lived on the same place, three miles from the county seat of Inyo County. At one time he had about 300 colonies of bees located on his home place. But two very severe winters, together with European foul brood this year, has reduced his numbers somewhat. Wild buckwheat is one of the principal honey plants of his neighborhood. This year the sheep were kept grazing so long that the honey from that source was almost a complete failure. Alfalfa and sweet clover follow and furnish some honey in most seasons. Mr. Rasmussen's apiary is especially attractive for a southern California apiary, being located in a dense shade of honey locust trees planted by himself.

The ravages of European foul brood over the valley in general have caused a very heavy loss of bees, and many small apiaries have been almost entirely lost. The honey crop of the Owen's valley—practically Inyo County—is all comb honey. Extracting has been tried here, but has not proven to be satisfactory. Owing to the dryness of the atmosphere, the honey is so thick that extracting is almost impossible. The crop in this valley is much below normal. Only in a few localities do they report a satisfactory yield. Almost all of the beekeepers here have joined the State Exchange. Heretofore they have been at the mercy of unscrupulous buyers. With the price of honey as high as it is this year, the producers have been offered as low as \$2.50 per case.

Bees are generally in good shape in southern California, and disease is well under control. Most of the honey has been sold at very good prices. Perhaps from five to ten carloads are still in the hands of producers. As high as 23 cents has been offered for the entire crop of some small producers. Comb honey brings about six and one-half dollars per case for No. 1. Bees are very much in demand at big prices. Occasionally an apiary is offered for sale by a man going to war, but, generally speaking, most beekeepers consider them as good an investment as they can make. Many of our beekeepers who moved their bees to the bean fields, have not met with the success they expected. A few very warm days seemed to cut the flow short, and many beekeepers will consider themselves lucky if their bees fill up well for winter. The lima bean, which does the best near the coast where there are heavy fogs, seems to be the only variety that yields honey in sufficient quantities to really pay for the extra move. The foggy days are not the best for the bees to work in, and consequently a yield of honey is not certain even from that source.

Corona, Calif.

L. L. Andrews.

In Minnesota—Word has just come from Washington thru our new special field agent that the man who has honey can not get sugar for feeding bees. If he has sold his honey, he will be compelled to accompany his application for sugar with a receipt from the Red Cross, showing that he has paid to the Red Cross the difference between the price of the sugar and that of the honey. This order comes rather late for Minnesota, since we have been assured that we could secure the sugar, and, as a consequence, many have extracted all their honey where otherwise they would have kept a sufficient amount in combs for feeding. We prefer feeding with combs of honey. In the fall we place on the brood-chamber a division containing a sufficient amount of honey of good quality to last the colony thru the winter. No excluder is used. The bees and queen will move into the upper division, and they will also remove all the uncapped honey from the lower division. Later the lower division is removed and put away for the winter. The honey that still remains in the combs will come handy in the spring, when this division is again placed on the bottom-board and under the brood-chamber shortly after the bees are removed from the cellar. We also put aside other combs of honey for spring feeding. [We are pleased to say that Dr. E. F. Phillips of Washington (who certainly knows) has telegraphed Gleanings that there is no truth whatever in the report that the man who has honey can not get sugar for feeding; or that the beekeeper who has sold his honey cannot get sugar to feed unless he pays the Red Cross the difference between the price of the honey he may have sold and the price of the sugar he asks for.—Editor.]

During the last three seasons several of our beekeepers have experienced considerable trouble from the loss of queens. This loss occurs generally in the early part of the season just when the queens should be laying their best. The mortality seems to be the greatest among young queens—those reared the fall before. Generally they simply disappear, but, in some instances, the queen has been found still alive on the bottom-board or in front of the hive, scarcely able to crawl.

Our State Fair was held during the first week in September. The honey exhibit was fairly good, considering the fact that we have had a poor year. Still it was far from being what it might have been had the beekeepers taken hold of it as they should. How to arouse greater interest in our annual honey exhibit is one of the problems facing the Minnesota beekeepers. During the six days of the fair the average daily attendance was 71,614. Manifestly this is one of our great opportunities to advertise honey,



FROM NORTH, EAST, WEST AND SOUTH



and we ought to improve the opportunity.
Minneapolis, Minn. Chas. D. Blaker.

* * *

In Iowa—At last, the beekeepers in Central Iowa are wearing a smile of anticipation. The bees have filled their brood-chambers for winter and for over a week have been storing surplus from the smartweed. The present weather prevailing for two weeks without a frost will see hundreds of supers filled with "nature's sweet"—the kind God intended man should eat, instead of vitriolized corn juice, strained thru bone dust to devitriolize it, and then sold on the market as glucose, or corn syrup, and the public told it is as "good as honey"—an insult to God and a travesty on man's judgment as to what is fit to eat.

The past two years of failure of the honey crop and the final disappearance of the honey on hand, together with the growing interest in bee culture in general, are going to add a healthy stimulus to the honey business. Every beekeeper is now being solicited continually for honey. The Iowa Beekeepers' Association is a rising power in this direction because of its increasing influence among the people—a result of the live interest exhibited by its members in all parts of Iowa. The sugar problem will be given a great relief, if the honey-producer can come into his own. Every Iowa beekeeper should talk honey, use honey, and sell honey every day in the year. Now is the very time and opportunity to popularize its everyday use. For over 40 years the writer has conducted a successful printing business by talking it every day and popularizing it. Since he began working with bees, the same rule applied has turned it around and now everybody asks about the bees, wants to buy honey, and doesn't even mention the printing business. At present, it just seems as tho everybody in Marshalltown is anxious about the honey crop and is real honey-hungry. The beekeepers of the town have made it so by talking about it, and will actually sell all their honey locally, because they have educated hundreds of people to eat honey, every day, who never before had given it a thought; and the present scarcity of it has practically caused their honey appetites to become ravenous.

The seventh annual convention of the Iowa Beekeepers' Association will meet in Des Moines on Nov. 6 and 7, in the parlors of the Chamber of Commerce. The earlier date this time is to accommodate the apiarists in general, and especially the horticulturalist members, who have their Midwest Horticultural show the same week. Every beekeeper and friend of the bees is invited to attend. A first-class program is being prepared, a copy of which will be mailed to every member of the Iowa Beekeepers' As-

sociation and anybody else interested enough to ask for one.

Marshalltown, Ia. Hamlin B. Miller.

* * *

In Ontario—Mention was made in notes sent for September issue of the large acreage of buckwheat in Ontario this year, and of the drouth prevailing at time of writing, which was likely to curtail both honey and grain if long continued. Shortly after writing, copious rains fell and buckwheat has given a fine yield of honey this year—perhaps one of the best on record in this section at least, considering the number of colonies that were in shape to take advantage of the flow. Needless to say, the crop at present prices is not to be despised, and, aside from the surplus obtained, colonies are put in first-class shape for winter, many heavy enough in brood-chamber so that no feeding will be necessary. I had started a number of two-frame nuclei in July, and nearly all built up to full strength and heavy enough for wintering, largely thru the good buckwheat flow that we were blessed with this year.

Speaking of feeding reminds me of the sugar shortage, as in localities where the honey flow failed as well as in places where foul brood is present, one has to resort to sugar whether he wants to or not. Present rulings are that beekeepers who urgently need sugar can lawfully get it, if it is **to be got**—which is the rub. Speaking with Secretary Hodgetts a few days ago, he told me that at present there was little sugar available, and it looked as if there would be a shortage for some time. It is to be hoped that in urgent cases, as already mentioned, sugar can be obtained; else a real hardship and loss will be the lot of many beekeepers, not to mention the loss of bees to the country in general at a time when honey is so urgently needed.

At date of writing, Sept. 7, the country has been having soaking rains. Freshly seeded clover, that for a while looked to be a "poor catch," is now beginning to show up nicely, and indications are that alsike will go into winter in fair condition, altho a number of farmers tell me that their seedings were killed by drouth and rank growth of grain which seemed to take all available moisture from the tender clover plants. But in driving along the roads I have noticed some fine fields of alsike showing up; so, possibly, the greater part of it will be all right.

Before the war, large quantities of alsike clover seed were exported to northern Germany, Denmark, Holland, and adjoining countries, and, as export to these countries practically ceased at once after hostilities began, many, including the writer, expected to see alsike drop in price and incidentally drop in acreage, to the loss of the beekeeper



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as well as the farmer. As I bought clover seed for a number of years for a large seed house, naturally I was interested in the clover crop from more than one angle. Contrary to expectations, alsike seems to be in as great demand as ever, and prices paid this year are high and the crop an abundant one in so far as yield per acre is concerned. Many fields around us have averaged 10 and 12 bushels per acre while a few have gone 14, and, in two cases at least that I know of, very nearly 15 bushels per acre were obtained. When one considers the small size of alsike seed, surely we must concede alsike to be one of the most prolific yielders of all the clovers, when conditions are right. Twelve and a half dollars a bushel, as seed came from machine, was a common price. So it needs no argument to prove that it is a great paying crop even in a time of inflated prices for grain and all other produce. Alsike is the premier honey plant of Ontario—no doubt about it—and naturally all beekeepers will be glad to know that for the present at least the acreage is not apt to grow less. Alsike and buckwheat when grown in a locality, make a combination hard to beat in so far as a honey-producing location is concerned, altho localities that have no buckwheat sometimes produce a little whiter honey than it is possible to get in a buckwheat locality by reason of the buckwheat coming up the following spring in the grain and blooming at time that clover is blossoming. Then again, if bees are wintered heavy on buckwheat, one has to be careful that none is put in supers, particularly if much hoisting of brood is practiced, as a very little buckwheat soon makes a showing in clover honey. But, for all its disadvantages, I still think that the advantages far more than make up for this, and, having bees in localities that have buckwheat and in other places where none is grown, I speak from experience on this question.

This phase of the beekeeping business was brought forcibly to my mind a few days ago when a friend from one of the eastern counties of Ontario called at my home to ask advice as to the merits of a location in the great clay belt of northern Ontario above New Liskeard. While big crops have been obtained in that north country and the quality is always fine, yet taking one year with another, I believe the clover-buckwheat combination is the safest, and so advised my friend. But all cannot keep bees in one part of the country, and I am free to admit, if I were a younger man not tied up with a family, that I would like the plunge into that new virile country, as I visited it some years ago and impressions received at that time as to the beekeeping possibilities have not yet left me by any means.

Goldenrod has always been a negligible yielder of nectar in our apiaries, but this

year appears to be a definite exception. Markham, Ont. J. L. Byer.

* * *

In Texas—Sweet clover as a honey plant for Texas has been given quite an extensive test in a few of the northern localities during the past season. The plant does very well wherever sown, and the growth is especially attractive on the poorer soils and so-called waste places. This year it was called upon to furnish honey for a good many colonies to build up on. The flow was heavy and of a very good duration. Many apiaries enjoyed a good surplus from sweet clover. The results of this venture should be of interest to beekeepers over the entire State. Sweet clover as a honey plant is worthy of more consideration by the beekeepers.

The Texas Agricultural Experiment Station has recently issued two publications of interest to beekeepers generally. Bulletin 231, entitled "The Beemoth or Waxworm," is a revised and enlarged discussion of the same topic formerly contained in Bulletin 158. The new bulletin discusses the experiments conducted with the beemoth very fully. Every beekeeper should become more familiar with the details of the life history of this expensive pest of the apiary and the possible control measures. This bulletin is free upon application to the director at College Station. In Control Circular "B," are contained the foul brood law and the new regulations issued by the State Entomologist in the Apiary Inspection service. Every beekeeper who buys or ships bees, honey, or appliances should be thoroly acquainted with the provisions of the law and regulations. The vast majority of the violations are due to ignorance on the part of the beekeeper. Certain changes are to be noted in the new regulations. A copy of this bulletin can be had upon application, as mentioned above.

Local rains have occurred over most of the State during the last month. Reports indicate that untold benefit will result from these rains. In the eastern sections, conditions are now more favorable than at any time in months. Fall flows of honey are now expected in several sections, and it is hoped that sufficient stores will be gathered to carry the bees thruout the winter. Good crops of honey have been gathered in localities in the northern part of the State. In one section, the cotton flow was very heavy on the black heavy land, but was almost nothing on the light sandy lands. This is usually the case, as was determined last spring when a survey of the honey plants was made.

Honey prices are still very steady with a slight advance in some sections. Those beekeepers who prepare their honey carefully for the trade are entitled to a big increase



FROM NORTH, EAST, WEST AND SOUTH



over many who "rob" their bees. It is astonishing how many pounds of inferior honey are offered to the consuming public. It is to be hoped that in the near future every beekeeper that sells honey will have enough self-pride, if not even pride in the industry, to put only first-class packages of honey on the market.

No beekeeper can afford to overlook any steps in the plan for successful wintering of every colony of bees. Added attention will be repaid as much with bees as with any other form of live stock. Stores will be the deciding factor this year. The Food Administration has rightfully set about to adjust the amount of sugar for feeding bees. Furthermore, there has recently appeared much good argument in the leading papers, showing that no artificial feed can entirely replace honey.

F. B. Paddock.

College Station, Tex.

* * *

In Florida

This is the first year that Florida beekeepers have considered the question of wintering the bees on sugar stores. With honey selling at four to six cents a pound there was no inducement for us to sell our fall crop and replace with sugar; but now, with honey at 20 cents and more, there is a big profit to be made—if it is practicable. According to reports received, the Food Administration will allow us to obtain the sugar; but whether we should avail ourselves of the privilege is another question, which must be decided

by the individual beekeeper. If honey is of more value to the Government than sugar, our duty is clear, and we should take the \$3.00 per colony additional profit which the feeding of sugar would give. Undoubtedly our bees would winter well on sugar syrup; but they will do that in this climate on even the poorest grade of fall honey and in view of the sugar shortage Florida beemen should consider not only the money value but the economic value of their honey. We have all made bountiful crops this year and received extraordinary prices on extremely advantageous terms, and we can well afford to ignore the extra profit that the Food Administration allows us, and winter our bees on honey as heretofore. There is another consideration that must not be lost sight of. If we feed sugar, we must do it so sparingly that none will be left over in the brood combs to be carried up and mixed with our orange honey, to cause trouble with the Pure Food Law. This will be extremely difficult, as the orange flow comes so early that more or less of the winter stores are always carried into the extracting supers. I am taking up this feeding proposition with the Food Administration, with special reference to Florida, and hope to have some authoritative information by next month.

Very few crop reports have arrived, but there has been a very heavy yield from partridge pea, and the prospects for a fall crop are excellent.

Harry Hewitt.

Apopka, Fla.



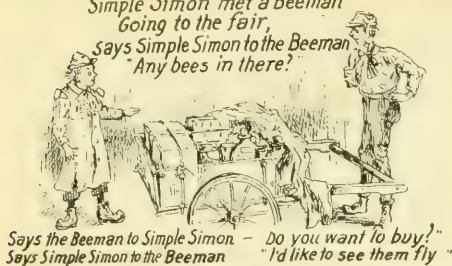
Chauncey Shinkle of Williamstown, Ky., is a patriot right. He sends the picture printed above, and says that the old family horse, the Ford runabout and the bees are all doing their utmost at home to help feed this nation and its allies, and he himself is soon to be on his way to France and that he goes gladly. He closes his letter to Gleanings by saying: "Good bye to the friends I have met thru Gleanings. I will soon be over there. When the war is over I will be home again and working with my bees."

HEADS OF GRAIN

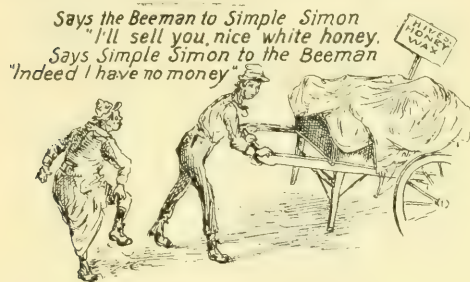
FROM

DIFFERENT FIELDS

*Simple Simon met a Beeman
Going to the fair,
Says Simple Simon to the Beeman
"Any bees in there?"*



*Says the Beeman to Simple Simon — "Do you want to buy?"
Says Simple Simon to the Beeman "I'd like to see them fly."*



*Says the Beeman to Simple Simon
"I'll sell you, nice white honey."
Says Simple Simon to the Beeman
"Indeed I have no money."*

*Says the Beeman to Simple Simon
"I've hives to sell to day."
Says itching Simon to the Beeman,
"I've hives to give away."*

Working Hours of Honeybees.

That editorial about
the bees gathering
clover honey when the

temperature was very low reminds me of something I have learned lately about the working hours of the honeybee. I am an outdoor sleeper, and over my porch this summer there is a cobaea vine. Often, on waking very early in the morning, I have heard the bees working on the blossoms of this vine. One morning earlier in the summer I looked at my watch and noted the time. It was **ten minutes past five** and not yet fully daylight! I had just waked up, so I don't know how long they had been working before that. Our bees are not New England bees either. I suppose they did not have to travel far, as there are a few hives not more than 75 feet away. But our summers here on the coast are cool, and at that time in the morning the temperature is decidedly not what we have always considered suitable for working with the bees. I have also noticed the bees humming about these flowers in the evening when it was too dark to read. (Miss) Flora McIntyre.

Ventura, Calif.

Disease Ravages in British Columbia.

European foul brood
is epidemic throat a
large portion of the

lower mainland of British Columbia. Parts of Langley, Surrey, New Westminster, Point

Grey, S, Vancouver, and Kerrisdale have lost from 50 to 75 per cent of the bees. The opinion is that the disease has been in the district during the past few years in an incipient stage, but, owing to the fact that few knew the disease (thinking it was chilled, sac, or starved brood), it was rampant before the uninitiated were aware of its presence. The disease appears to have gone the usual course, wiping out the blacks and hybrids, and badly affecting the Italians. The slogan of the local inspector, F. Dundas Todd, has been: "We in British Columbia make no pretence of curing foul brood; we simply wipe out the colony and hive by fire," and "when burning you know the end." In spite of this we have now the following remedy handed out to men who have been told there was only the burning remedy: "TREATMENT FOR EUROPEAN FOUL BROOD: First day—kill queen; same day, order Italian queen from queen breeder, to be mailed within 14 days; eighth day—destroy all queen cells; 21st day or later—introduce new Italian queen; it is useless attempting to cure weak colonies; all combs badly affected with disease should be removed from the hive and burnt."

Cloverdale, B. C. Williams Hugh.

BEFORE



AFTER EATING
**Martin's Sage
HONEY**

THE BEST THAT MONEY CAN BUY
JOHN MARTIN

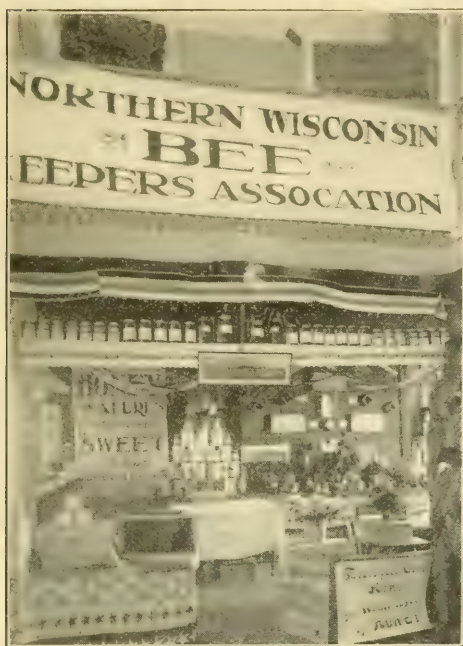
TORO CREEK

MORRO,

CALIF.

[An example of clever advertising that explains itself—if looked at upside down, as well as upside up as here printed.]

HEADS OF GRAIN FROM DIFFERENT FIELDS



These are fair times—and here's an attractive honey exhibit.

Do Bees Recognize a Failing Queen?

Supersedure is common enough among bees, but now and then a peculiar case presents itself. While visiting E. E. Mott of Glenwood, Mich., I had the rare privilege of seeing two queens peaceably occupying the same hive, and, indeed, the same comb. As we approached a certain hive Mr. Mott remarked that the bees were superseding their queen. Upon removing a frame of brood in quest of young larvæ with which to graft cells (for the queen was a valued breeder), we found her laying scatteringly, often dropping eggs without backing into a cell, while some cells contained three or four eggs or larvæ. Upon the same side of this comb was also a young queen apparently about ready to lay. Neither queen seemed to pay any attention to the other.

The mother was one year old, and Mr. Mott gave her to me, suggesting that I might raise a few queens from her to use in requeening my yard. As she is a beautiful golden and of exceptional breeding stock, I was much pleased to give her a trial. So on July 15 I removed the queen from a good colony and introduced her by the cage method. On July 23, nine days later, I found her accepted and laying scatteringly as before. Imagine my surprise to

find 15 finished queen-cells indicating the bees' intention to supersede her. There were no cells started previous to her introduction, and I never had cells started before with queen caged. Now, how could the bees have recognized her as a failing queen without giving her a trial? C. V. Rice.

Lawrence, Mich.

[I do not think the fact that the queen was failing had anything to do with the starting of those cells. I have been taking tested queens from our strong colonies and introducing untested queens the same day or the following day, and several times I have found on checking up these colonies 5 or 6 days later, that they had queen-cells under way and the queen safely introduced and laying. I do not think these cells were started under a queenless impulse, because the colonies are without a queen only a few hours, and also because the bees complete the cells. They are usually destroyed about the time they are ready to hatch. This I think is done by the laying queen. Twice during this season I have found where the virgin hatched and killed the queen. I introduce in Miller cages with a strip of cardboard over the candy. It takes about two days for the queen to be released. It seems probable that to have a queen in the hive and no eggs layed for this length of time would be a condition similar to that of a failing queen, and might start a supersedure impulse, which would account for the starting of these cells. M. T. Pritchard.

Medina, O.

Results of Burying 67 Colonies.

I wrote you a description in *Gleanings* for February, 1918, page 102, telling you how I buried my bees. I am now going to tell you how they came out. I weighed them all (67 colonies) on Nov. 21 and 22 last. They averaged 62 pounds. It started snowing the night I buried them, Nov. 23, and the ground was covered with snow till the first of April. Where my stands were, the snow in some places was seven feet deep. I had to shovel the snow away to get it melted, so as to get my bees out onto the stands. The snow was not all away till Apr. 15, when I put them out.

These bees had not seen daylight for 4 months and 23 days. We took them out after dark, and during the next two days they were carrying pollen. We weighed them on the second day they were out. There were 65 alive and in good condition. They averaged 48 pounds. Of the two lost one had lost its queen; there were no bees in the hive, and all the honey was left. In the other hive the cluster was on one side of the hive and had 18 pounds of sealed honey. It took about 14 pounds of honey

HEADS OF GRAIN FROM DIFFERENT FIELDS

on an average to winter these bees. Twenty of these colonies were from two-pound packages bought from M. C. Berry, Hainsville, Ala., May 27, 1917. So no one need be afraid to buy bees from the South—if they can get them. They are all Italians in 10-frame Langstroth hives. Bees did not winter very well in cellars in this part of the country. N. Summers.

Winchester, Ont., Can.



Which Direction to Face the Hives.

Last spring I purchased an apiary that had not wintered well.

About 55 per cent of the colonies had died, tho there were plenty of stores left in the hives. The apiary was on a southeast slope, which gave the hives some protection, but one-half of the hives faced northeast and one-half southwest, both directions being bad in this section of the country. All hives here should face south and be on a southern slope with a windbreak of some kind west or northwest. Four miles from this apiary, I had 35 colonies all on a southern slope, all hives facing due south and well protected on the north and west by woods, while the

south is wide open. Of these colonies 32 came out all right.

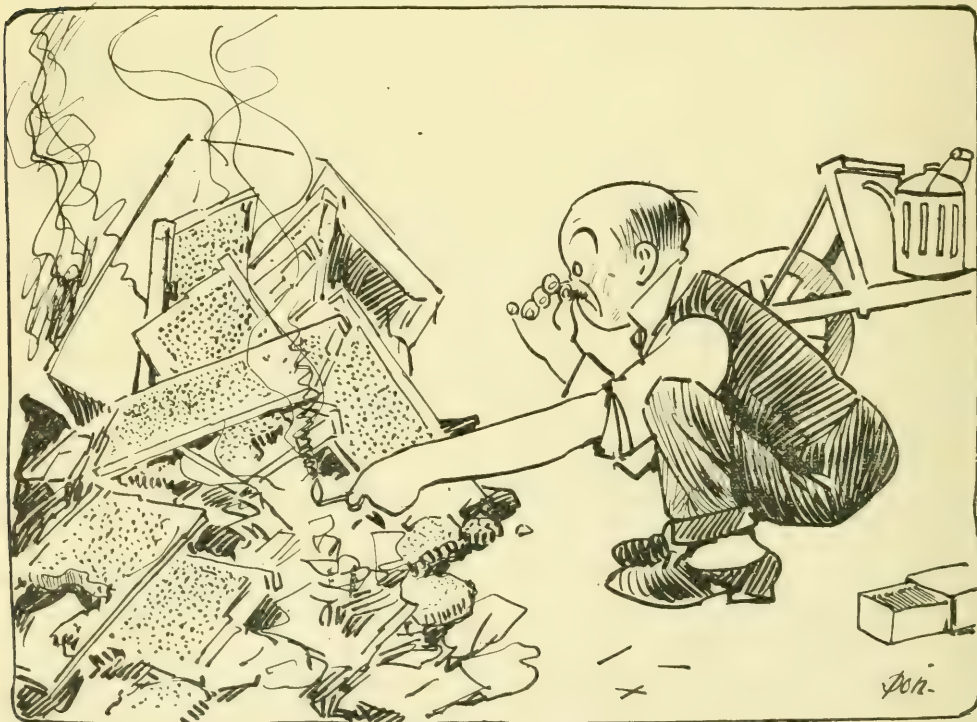
In my locality I would not be bothered with cases of any kind, if they were put on free of cost. Now, don't understand that I am applying this to the whole of Virginia, for I refer only to Henry County. In the State of Virginia, we have all kinds of climate, but here we seldom see 10 degrees above zero, and not more than once in 15 years does it go as low as zero.

In the apiary that I purchased the hives were not in winter cases, but were placed in groups of four. Not a single colony lived that stood in a northeast corner of a group. Fourteen of the nineteen that withstood the winter faced the southwest (not the proper direction, but the best in this yard).

Besides suitable windbreaks and proper facing, I believe it is important that plenty of honey be left in the hives. If 10 pounds more honey is left than is needed, it will be there for the following winter. Ten pounds extra at 20 cents would be worth two dollars, which at six per cent would amount to 12 cents per colony, and this seems to me a cheap enough insurance.

Axton, Va.

D. F. Dunlop.



THE BACKLOT BUZZER.

That bacillus of European foul brood has a yellow streak and a progeny that don't fight fair. Rae says. "Better change it from bacillus pluton to Bacillus Teuton."

THE annual meeting of the Northern Illinois and Southern Wisconsin Beekeepers' Association will be held in Memorial hall in Rockford, Ill.,

on Tuesday, Oct. 15. All interested in bees are invited to attend. B. Kennedy of 2507 West State street, Rockford, Ill., is secretary.

* * *

The Wisconsin State Beekeepers' convention will be held Dec. 5 and 6, 1918, in the Senate room of the State capitol at Madison, Wis. N. E. France of Plateville is president, and E. Hassinger of Greenville is secretary.

* * *

Frank C. Pellett, formerly field editor of the American Bee Journal, is now assistant editor, and has moved to Hamilton, Ill. The position probably means that, so far as the Messrs. Dadants are concerned, Mr. Pellett will have largely the editorial management of the American Bee Journal.

* * *

The National Beekeepers' Association will hold its next convention at Chicago, Ill., on Feb. 18, 19, and 20, 1919. Floyd Markham, secretary-treasurer, of Ypsilanti, Mich., writes that he had expected to have part of the program ready for publication this month, but correspondents have been slow in answering his letters and so he has to delay announcement of the program till later.

* * *

The annual meeting of Adirondack Beekeepers' Association was held on Aug. 23 at the apiary of M. G. Devine at East Lake George. About 75 attended and 20 new members were enrolled. The business meeting and election of officers was held before a basket luncheon was served. Officers elected were: A. W. Cary of Glens Falls, president; M. G. Devine of East Lake George, vice president; H. E. Gray, Fort Edward, secretary-treasurer.

* * *

The Western New York Honey Producers' Association will meet in a two-days' convention at the Genesee Hotel, corner Main and Genesee streets, Buffalo, on Friday and Saturday, Nov. 1 and 2. A very interesting and instructive program is being arranged. As the business of beekeeping is undergoing a marvelous evolution, it is the object of the association to promote and develop those methods that make for efficiency in both production and selling. Programs sent on request to Howard M. Myers, secretary, Ransomville, N. Y.

* * *

The Crop Report Committee of the Ontario Beekeepers' Association met in Toronto on Thursday, Aug. 8, 1918. Owing to the serious situation in regard to sugar for fall feeding, the Executive Committee of

JUST NEWS

Editors

the Association was also called together for consultation. Reports were received from over 500 of the members in Ontario and from correspondents

in Quebec and the United States. The Ontario average per colony reported was 62.4 lbs. The most disturbing feature in the market situation is the ruling of the Canada Food Board that no sugar can be obtained for fall feeding. This means that from 25 to 40 per cent of the average crop must be held for feeding back to the bees. In view of these conditions, the committee recommends the following prices: Best quality light extracted, wholesale, 24c to 27c per lb.; same at retail, 5c to 8c higher; No. 1 comb, wholesale, \$3.00 to \$3.75 per dozen; No. 2 comb, wholesale, \$2.00 to \$3.00 per dozen.

* * *

The Field Day of the Federated Massachusetts Beekeepers' Association, Inc., held jointly with the Eastern Massachusetts Beekeepers' Association, at the Norfolk County Agricultural School at Walpole, on Aug. 7, drew a large and enthusiastic audience to hear the excellent program. After the address of welcome by the director of the school, Mr. Kingman, J. E. Crane of Middlebury, Vt., delightfully explained the curious marriage customs of the different flowers, and by his charming tale brought home the vast service rendered by the honeybee, apart from her value as a honey-gatherer. Following Mr. Crane were practical talks by Arthur C. Miller of Providence, R. I., on "The Wintering Problem in New England." Allan Latham of Norwichtown, Conn., spoke on "Pasturage," and Dr. Burton N. Gates of Amherst on "The Beekeeping Situation Today and the Future of the Industry in Massachusetts." Dallas Lore Sharpe also contributed a few words. The new importance and dignity of the honey industry was emphasized, also the value of the bee in the program of intensive agriculture necessary in New England.

The announcement of the retirement of Dr. Burton N. Gates from the office of Inspector of Apiaries and Associate Professor of Beekeeping at the Massachusetts Agricultural College caused expressions of real regret from all sides. Dr. Gates has built up an apicultural department at the college second to none in the country, and while the beekeepers of the State felt that his call to a wider territory was to be expected, his loss to Massachusetts will be widely felt.

A rising vote of thanks was tendered Dr. Gates for the inspiration and aid which he has been to the beekeepers of Massachusetts, and resolutions appreciative of him adopted.

Dr. Gates is to become provincial apiarist of Ontario, the position formerly held by Morley Petit.

QUESTIONS.
 —(1) Is it really of much importance to requeen colonies which have queens two or three years old? (2) I find that my swarms, if strong, very often store more honey than the old colony. If there is any great advantage in a young queen, this would indicate that the old queen remains with the old hive. Is this true?
 Louisiana.

John M. Ware.

Answers.—(1) It is very important to keep only young queens in the hive. Colonies having old queens are much more inclined to swarm and usually do not work with the vigor of those colonies having young queens. Of course there are some exceptions to this, but, as a general thing, we find it does not pay to keep queens more than two years, and we prefer those only one year old. (2) When a swarm issues the old queen goes with the swarm. The reason that this new swarm with the old queen stores more honey than the old swarm is simply because the old working force is with the new swarm. In the old hive there are only brood and young bees, and but very few workers.

Question.—My bees are wintered in the cellar. Please tell me where to put the frames of honey—on the sides, in the center, or alternate the combs of honey and brood?
 Nebraska.

Fred Siman.

Answer.—The combs should not be alternated, as the frames of brood should be left together. Aside from this, we do not think that, when wintering in the cellar, it really matters where the honey is placed.

Question.—Could you tell me of a substitute for honey or sugar to feed the bees for winter?
 California.

A. F. Manz.

Answer.—For suitable winter stores we know of no substitute for honey or a sugar syrup. If anything else is used for stores, the bees will not winter well and will probably contract dysentery before spring.

Question.—I have today found one of my hives queenless, and the colony not very strong. The only brood in the hive is drone brood. Do you think it advisable to requeen at this time of the season?
 Ohio.

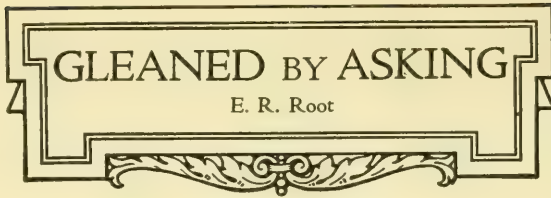
Albert Supply.

Answer.—Such a small colony, made up of old bees, it would hardly pay to requeen at this time of the year. Young bees are necessary for safe wintering. We suggest that you kill these bees and give their stores to other colonies.

Question.—After the close of the honey flow, I introduced several queens in mailing cages. Seventy-two hours after introducing I opened the hives and found some of the queens released and others not released, but an excessive number of queen-cells present in both cases. When destroying the cells I precipitated several bad cases of balling and lost three queens thereby. Now wherein was my practice faulty? Should I have left the cells, trusting the queen or the bees to destroy them?
 California.

E. O. James.

Answer. After the introduction of



E. R. Root

queens, colonies do sometimes start queen-cells, but the queens may usually be trusted to destroy such cells, if given sufficient time. It is generally not

safe to open a hive in less than five days after a queen has been introduced; and at a time when the bees are especially cross, it would probably be safer to allow even a longer time than this to elapse before examination of the colonies.

Question.—What sort of place must I have to keep my bees in this winter? I have a good cellar, but it freezes. It is dry and free from mold; and then I have a room finished off from the stable floor that is clean and dry. It is double-floored, and boarded and clapboarded, 8 by 20 feet.

Maine.

H. L. Cray.

Answer.—Rather than keep the bees in a cellar that goes below 32 degrees Fahrenheit it would probably be better to winter them outdoors or in a room in the barn, as you suggest, in double-walled hives with a four-inch tray of packing above the brood-chamber. If in the barn, they should have an outside entrance, so that they may be able to fly on warm days in the spring. If you decide to place them in the barn, they should not be put there until after the bees have stopped flying in the fall. If they have a flight in less than two weeks after they have been moved such a short distance, they would be apt to return to the old location and be lost.

Question.—Can you tell me how to avoid robbing when using the Boardman feeder?

Long Island.

E. M. Barteau.

Answer.—These feeders are now made in one piece and not nailed together as previously. This helps somewhat in preventing robbing, but in our own apiaries we have been using a plan that we are sure you will be glad to try. Instead of placing these feeders at the front entrance we cut an opening at the back of the hive just the right size to insert the feeders. In this way there is not room for the admission of a single bee, and not one drop of syrup is exposed. This works well and does away with the robbing trouble entirely.

Questions.—(1) I wish to improve my bee cellar by putting in an underground ventilator. How far must the trench run from the cellar to thoroly warm the fresh air? (2) How many feet deep should it be? (3) How many inches in diameter? (4) What material is the best and cheapest. (5) Do you think 8-oz. duck is heavy enough for covers on hives where the temperature stays around 40-42 degrees?
 New York.

Walter J. D'Allaird.

Answer.—(1) The trench running from the cellar should be about 150 to 300 feet in length, depending on the soil and on the depth beneath the surface. (2) The underground ventilator should be on the level with the bottom of the cellar and then grad

ually come to the surface at the outer end. (3) The sub-earth ventilator should be from 4 to 6 inches in diameter. (4) The upright ventilator should be a wooden shaft extending up thru the roof, and the sub-earth ventilator should be made of tile or sewer pipe. (5) The 8-oz. duck is all right for covers, but if this is used, the entrance should be contracted to two or three ins. by $\frac{3}{8}$ in., or perhaps to four or five $\frac{3}{8}$ -in. holes. If sealed covers are used, then a full entrance should be given. The main point is to have an entrance of such a size that the temperature of the cluster will be about 57 degrees Fahr.

Questions.—Will you please inform me what size and kind of nuclei the most scientific queen-breeders are using today. I have been using twin nuclei with four small frames in each compartment, but these give the queen too little space to lay in, run short of stores quickly, and cause a more or less unsettled condition among the bees. Do you think I would be better satisfied with a 10-frame hive divided into three or four compartments?

California.

E. M. H.

Answer.—The size of nuclei for queen-rearing will depend upon the size of your queen-rearing business, and how long you will have to hold the queens before mailing them. When the business is large and queens can be sent out the day they lay, the baby nuclei are preferable. The queens can be found more readily, they take fewer bees, and are more kindly disposed toward virgins or cells given them. But with baby nuclei queens must be removed the day they begin laying. When the breeder's orders come in irregularly, such nuclei are not as satisfactory as two-frame nuclei using full-sized standard Langstroth frames. Queens can be kept in these indefinitely. They are easier to make up, and at the close of the season can be united with other nuclei near by. On the other hand the baby nuclei, as the season winds up, if there are any bees left, are not worth anything. A 10-frame hive divided into three compartments, each having an entrance on a different side or end of the hive, is very satisfactory. If one has a small business, it is preferable to the large-sized nuclei on separate stands. It has the great advantage at the close of the season that the division-boards can be removed and the nuclei united with one queen.

Questions.—Is it sufficient to shake bees having American foul brood, only once and onto full sheets of foundation?

I have some frames containing full sheets of foundation which have been in supers over American foul brood colonies. Some are partly drawn and some not drawn at all. Are these safe to use? I also have some filled with honey in the super. These would be infected, would they not?

Pennsylvania.

C. R. H.

Answer.—We do not believe that ordinarily it is necessary to shake twice for the treatment of American foul brood. One shaking is a severe enough strain on a colony. If any rare case should later show evidence of the disease, it could be treated a second time. But in all our years of experi-

ence, we have never found a second shaking necessary, and we consider it only a waste of material and time. In supers of foul-brood colonies, the frames containing full sheets of foundation would in all probability be free from disease. But it would be hardly safe to use them, and much less would it be safe to use those partly drawn out which contain honey. We would consider any combs, especially if they contain honey, in supers over colonies affected with American foul brood, as decidedly unsafe for use again.

Question.—Objection has been made to solid combs of stores, on the ground that these cold slabs of honey are a decided hindrance to good wintering. Now, it has lately occurred to me that solid combs of stores are beneficial instead of detrimental, for two reasons: (1) The more solidly the combs are filled with stores, the less hive space there is to be heated. (2) A solid comb, when once heated, retains its warmth much the same as a warm brick. Is my reasoning correct?

Missouri.

J. H. Fisbeck.

Answer.—As for the extra hive space to be heated, less heat is required to heat air than to heat honey. We have no fear of over-emphasizing the importance of retaining the cluster unbroken and undisturbed thruout the winter. As the honey is gradually eaten, the warm compact cluster slowly moves upward. The parts of the combs included within the cluster have their cells tightly wedged full of live bees, which is a much warmer arrangement than cells filled with honey. Please note that during very cold weather, the principal difference in compactness at the center of this winter cluster, and that of a cluster hanging from a tree, is in the thin midrib and layers of wax and cocoon walls separating adjacent cells.

Question.—When packing in the quadruple case, why would it not be a good thing to go a step further, and, after packing as recommended, placing two entrances east and two west, put on top of these four to six inches of dry sawdust and then another quadruple case with entrances north and south, and then four to six inches more of sawdust and another case on top with entrances east and west, the same as the lower tier? This would make a case holding 12 colonies, and only requires the material for one roof and one floor. Of course, the middle tier would have an unfavorable direction of facing, but this disadvantage would be more than offset by the added warmth of position between the first and third tiers.

Angus Edwards.

Ohio.

Answer.—Some examination during the spring will be desirable before it is time to unpack. Therefore we do not think it advisable to tier them up three high, as you suggest, for it would be very difficult and unhandy in the spring to be obliged to unpack and repack, to say nothing of lifting off eight colonies in order to examine the four lower ones.

Question. Please send me instructions how to keep my old queens so as to use them if some of the new queens fail to get introduced.

Pennsylvania.

B. F. Forsyth.

Answer.—Just cage them in separate cages and place the cages on top of the frames of another colony.

"I WINTER my bees in the cellar under the house, and can hold it to 42 degrees from the time they are put in until it becomes warm in the spring when it gets up to 47 or 50. I have lots of ventilation which is used as needed, and the bees came out in fine condition last spring as they went in with lots of old bees. I didn't lose a colony and not many bees."

—C. S. Williams, Ingham County, Mich.

"'Bee raiser' is a new one on us."—The Tillson Co., Ltd., Tillsonburg, Ont.

"The poorest year in 40 years. Bees have no honey at all."—Hohmann, Dubuque County, Ia.

"Our honey crop in this section is a total failure."—Franz E. Roese, Crawford County, Kans.

"I would keep bees if there wasn't a cent in it. They seem like a part of the family."—D. F. Dunlop, Henry County, Pa.

"Please stop my queen advertisement as I have to go to the army in a short while."—L. L. Forehand, Lowndes County, Ala.

"This has been a very hard year on bees as well as on beekeepers in southwest Missouri."—Claud Barker, Jasper County, Mo.

"Can you inform me as to whether I can buy a live king bee, or how to raise one?"—H. A. Zartman, Northumberland County, Pa.

"May Mr. A. I. Root be spared many a year to continue to teach the world his good works."—H. W. Schumann, Queensland, Australia.

"I have a swarm of Holy Land bees that have produced 128 pounds this year—about three times as much as any other swarm."—Theo. Bayless, Hancock County, Ohio.

"It will prove a good investment to give the boy or girl a colony of bees for their 'very own.' Ownership increases interest."—Edwin Ewell, Washtenaw County, Mich.

"I have sold several tons of dark amber fruit honey for 17½ cents per pound. I believe there will be a very good crop taken from the irrigated alfalfa districts of central and northern California."—J. E. Wing, Santa Clara County, Cal.

"Extension work is going along in fine way in Michigan. Beekeepers are beginning to see the need of greater co-operation. Our great clover regions spell opportunity for the man who knows how."—Edwin Ewell, Washtenaw County, Mich.

"From reports gleaned from southern California (10 counties) it looks as if the

BEES, MEN AND THINGS

(You may find it here)

crop would be about 65 per cent of last season. In some localities it is a bumper, while in others it is barely enough to winter bees thru. Prices are

running about 17 to 19 cents, with very little honey moving."—G. W. Bercaw, Los Angeles County, Calif., Aug. 17.

"This year's prospects so far are quite fair. Altho unusually late flow, yet the quality is far superior to any previous in our eight years here."—Amos Thorstenberg, Fort Bend County, Tex., Aug. 1.

"The Nebraska State Beekeepers' Association just held at our State Fair was a great success, and soon our Association will be again in its ranks with neighbor associations as a live one."—O. E. Timm, Douglas County, Nebr.

"Another cure for foul brood is to breed only from your long-lived queens. If you have a queen that is eight years old, you have a jewel, and save every egg from her for a queen-cell."—C. A. Neal, Bee Specialist, Grant County, Ind.

"Dr. P. A. Mariotte has, I dare say, the highest colony of bees in captivity. He keeps an observation hive in his dental office on the tenth story of the Thompson Building at Oakland, Calif."—E. O. James, Alameda County, Calif.

"The majority of beekeepers here have had an excellent season. The average price obtained in the open market was from 16 to 18 cents, and in a few instances sales were made as high as 26 cents a pound."—R. W. Brickell, Dunedin, New Zealand.

"The honey crop in this locality was very good. Many people are buying honey this year to prepare for a sugar shortage this winter if it comes, and so the demand has been larger than the supply."—Sherman Goodlander, Wabash County, Ind.

"About one-fourth crop of honey here the way things now look. Will have to feed back the most of it. We are asking 25 cents a pound for comb. There is not much extracted honey produced in this part."—H. Cuddebach, Barry County, Mich.

"There is no honey in this neighborhood, and I could sell thousands of pounds if I only had it. The ground was white with clover, but the bees didn't work on it as there was no nectar in it. If the bees get enough to winter over I shall be satisfied."—L. D. Goelzer, Racine County, Wis.

"The beekeepers of this vicinity have organized the Henderson County Honey Producers' Association. The objects of the organization are to co-operate in Italianizing

the bees of this vicinity; in securing more honey and a more nearly uniform price both for the producer and the consumer." R. R. Banta, Henderson County, Ill.

"I believe that in many parts of Mississippi we have an excellent opportunity for beekeeping. This is especially true in the northeastern and northwestern sections of the State."—R. W. Harned, Entomologist, Mississippi Agricultural and Mechanical College.

"It has been a fairly good honey season in this locality. Clover commenced earlier and lingered longer than usual with scarcely a break between the summer flow and fall bloom. A cold July-August spell had a retarding influence but the present month, September, is fine."—Lewis P. Tanton, Charlottetown, Prince Edward Islands.

"Now here in Tennessee when we have a honey flow it is generally one of comparative slowness and is much longer drawn out than those of the States further north. But our warm winters are just as fatal as our cold ones, and I find that my greatest loss is invariably caused (1st) by an old and failing queen; (2d) deficient stores; and (3d) too much room."—J. A. Barden, Tennessee.

"I believe the peanuts growing hereabouts are the source of an excellent honey flow equal to our northern clover honey. * * * Have learned quite a lot about this muck land since we came here. There is one type of it which will raise practically nothing until it is worked up and rotted a few years. Another type, on which the elder grows, is fine and grows enormous crops."—Leon C. Wheeler, De Soto County, Fla.

"Just a few words from a beginner. I started with two packages of bees. Each package contained two pounds. Now have a surplus of a hundred sections of honey and also three more hives of bees. I started bees on sheets of foundation. It looks like they will winter fine. I got one package in the first part of May; the other, in the last part. So I think that is pretty good for a beginner for the first handling of bees."—W. C. Young, Chicago, Ill.

"That word *vitamine* is derived from '*vita*,' Latin for life, and '*amine*,' signifying that the substance is kin to ammonia. The definition given in Stedman's Medical Dictionary is: 'One of a group of substances of unknown composition present in very small amount in natural foodstuffs which are essential to normal metabolism, and the lack of which in the dietary causes beriberi and other deficiency diseases.'"—Minneapolis Journal, June 17.

"We have no clover honey here. Our main crops are collected from the eucalyptus, of which we have about 12 different varieties in this locality. They bloom generally from July till April, and during that time is our good season. We do not pack

our hives here for winter, as plenty of stores is all that is necessary to have them winter well. We are right in the middle of winter now."—F. Brown, New South Wales, Australia, July, 1918.

"Beekeepers have been accused of wishing to feed sugar only that they might liberate honey to sell at a higher price. They have even been called a nasty name which we do not think should ever be applied to a bona fide producer of food—this, of course, thru a lack of understanding of the facts of the case. While there is no use denying that the present difference in price carries weight, and is the most weighty incentive to increase production, the best beekeepers fed sugar just as freely twelve years ago when there was very little difference in the wholesale prices of the two, and would prefer to feed it today if it cost as much as the price of honey."—Canadian Grocer, Aug. 23.

"The Demuth-Pritchard plan of using two or three hive-bodies or two hive-bodies and a super for an outside case and an inside case of $\frac{3}{8}$ -inch lumber made large enough to hold six frames standing on end, which of late has been referred to and commented upon in Gleanings, is open to several objections, among which are these: The first cost of material and labor in making the cases; the time and labor spent in 'fussing' with the packing and unpacking; the storage room, and time and labor required to store the surplus frames (that is, the two or three frames removed from the brood-chambers). Farmer beekeepers do not have time to do much extra work."—F. K. Massie, W. Va.

"An interesting decision was handed down during the week by the Appellate Division of the Supreme Court of New York. It was in the test case as to the legality of saccharine as a substitute for sugar. The defendant was the Excelsior Bottling Works, who was prosecuted by the New York Health Department for using saccharine as a sweetener in drinks instead of sugar. The concern was convicted in the lower court on the ground that the New York State Health Law considers saccharine a harmful adulterant and the case was appealed. The court holds that the use of saccharine, if fully and fairly disclosed on the label, does not constitute an adulteration within the meaning of the law, and goes so far as to say "since saccharine is not injurious to health its use may be regulated but cannot be prohibited under the exercise of the police power." This decision will probably affect the position of saccharine all over the country."—Modern Merchant and Grocery World.

"Colonies will average about 50 pounds; had only one rain in 12 months. There are wonderful drouth-resisting honey plants in this Santa Ynez Valley, including button sage, several species of goldenrod and very numerous other wild flowers, except beans and some alfalfa. Main flow which lasted

about a month was from sage, yielding the only surplus."—F. P. Heston, Santa Barbara County, Calif.

"Many of the eastern confectioners, finding that they can not get sugar for their products, are sending to Arizona for strained honey. Alfalfa bloom and flowers now furnish much of the sweet substance for honey production."—Los Angeles Times, Aug. 27, 1918.

"Gleanings is very refreshing in its 'Our Homes' Department; its anti-tobacco cogitations, etc. Would be glad if you would tell the venerable Dr. Miller, if you get a chance, that I am frequently on the brink of breaking the commandment as per Exodus 20:5, 'Thou shalt not bow down thyself to them,' etc. There is the remembrance of another Scripture passage which says, 'The hoary head is a crown of glory, if it be found in the way of righteousness.'"—W. E. Welch, Union County, S. D.

"It has been about the worst honey season here I can remember—less than one-tenth of a crop. Last week I was called to Madison by the Sugar Board which was receiving a mass of letters from all over the State, telling of bees starving, no honey, and that the beekeepers must have sugar to feed. Because of sugar restrictions, many wanted sugar under excuse to feed bees, and some that they might extract honey and feed sugar."—H. H. Moe, Lafayette County, Wis.

"In our outyard district of clover bloom, colonies have made fairly good averages of both extracted and comb crops. Our home markets do not use honey as in former years owing to advance in prices, but it is up to us to dispose of our surplus in the open market, thus helping do our part in supplying the nation's need for sweets. My three sons and other's sons are doing their part (at the front) and we who are standing back of our boys can do something toward supplying the needs of war."—Chas. L. Hill, Atlantic County, N. J.

"Sweet clover is coming into its own in this locality for pasture. A 13-acre field of sweet-clover pasture, on which I moved my bees July 20, yielded over 40 pounds to each colony since that late day. The cows on this pasture have had nothing else to eat than what they got in this sweet-clover pasture and were thin when turned into it in the spring. They are now fat enough for the butcher's block, are giving a fine flow of milk as they have done all summer, and give the finest sweet butter and finest flavored milk."—M. L. Brewer, St. Joseph County, Mich.

"I have been having trouble with June bugs. These bugs are fond of sweets, their favorites being figs and watermelon rinds; but since this food is about out of season they have gone to bee robbing. The fronts of my hives were covered with these pests,

and there were just as many inside of the hives. The bees put up a stiff fight, but on account of the hard shells of the bugs the bees could not do anything with them. I have placed wire entrance guards on the hives, and the bugs being much larger than the bees can not pass but cluster on the outside"—A. L. Christiansen, Chatham County, Ga.

"It has been a poor year for beekeepers over here. In June we did not get any rain and the vegetation dried up, and since the rain came it has been cold and windy every day. I believe I am the only person in this country that uses Langstroth frames and Root hives. I believe we are not far behind the United States in high prices. A hive with bees has cost \$30.00 this year. When it comes to windmill electricity we have many such windmills in Denmark, and last winter we wished that we had more, as our government allowed each family only one liter of petroleum per month. When it comes to beekeeping we Danes are far behind the Americans."—Louis Jensen, Hjelmerup, Fangel, Denmark, July 14, 1918.

"The kind, genial beekeeper host at a picnic I recently attended, is selling his honey by a reversed retail-wholesale system of price. He sells nice light extracted honey for five cents less at retail than he obtains net at wholesale. Only 20 cents per pound by the quart or gallon, but 25 cents per pound F. O. B. by the hundred pounds. How does he explain it? 'Oh,' says the generously considerate man, 'the people would not pay 25 or 30 cents a pound for extracted honey, and I want to keep my home honey trade.' Yet this beekeeper would say he is not keeping bees as a philanthropy. Moreover, there are other beekeepers in the same town who labor under the idea that to charge market price for sweet goods is fair business and no offense to society."—Clark W. Wilson, Madison County, N. Y.

* * *

A SOLILOQUY

(By an old bee lover, while watching his bees.)

While the summer's sun is shining,
We prepare our winter supply,
And if you take too much from us,
When winter comes we'll die.

Just let us pass the winter
As we are put away,
Then you can have the "super"
About the first of May.

The super is the top of our little store;
Just empty and return it,
And we will make you more.
Give us good foundation
And we will build it straight;
Then your conscience wont rumple,
When our honey is on your plate.

There are none of us that are carpenters,
We can neither saw nor nail,
But all of you may some day learn
We have stingers in our tails.

—F. L. SHARP,
Chief of Police, Baltimore, N. C.

It is to be hoped that by this time the bees have all been supplied with their winter stores, for feeding often starts brood-rearing; and breeding in October may result in bees too young to withstand the winter, such bees being sometimes pulled out at the entrance during chilly November weather. If September brood-rearing has been so excessive that feeding has been delayed, the stores should now be given as soon as possible. Extreme care should be taken that no robbing be started; for undue excitement at this time may seriously affect good wintering. As soon as the colonies are fed they should be packed for winter.

Wintering in Packing Cases.

There are several good methods of wintering (see pages 588-596); but we shall here describe only two, both of which have proved easy, safe, and well suited to the beginner.

The hive which in our April Talk we recommended to the beginner may be used for wintering, if it is placed inside of a winter packing case, which may be easily constructed of any cheap lumber available. The packing case should be made of such a size as to allow five or six inches of packing on the sides and top; and a wooden tunnel should connect the entrances of the inner hive and inner packing case. For packing dry forest leaves tightly packed are to be preferred, altho shavings or chaff or also satisfactory.

Wintering in Double-walled Hives.

Rather than go to the extra trouble of making a packing case many will prefer to purchase double-walled hives and save the single-walled hives for the swarms that will issue the following summer. It is quite handy to have a few single-walled hives for this purpose; and after the swarming season such colonies may easily be changed to double-walled hives. Those wintering in double-walled hives usually keep their bees in these hives the entire year, since they are warmer in winter and cooler in summer.

Contracted Brood-nests.

If the directions of our last issue have been followed, the brood-nest is already contracted to seven or eight frames which are crowded over to the warmer side of the hive. At the side of these frames is placed a tight-fitting division-board, and the space filled in with tightly packed forest leaves or shavings or chaff division-boards.

Upward Ventilation.

Over the top of the hive is spread a good mat of carpet or canvas which is held up

TALKS TO BEGINNERS

By the Editor

from the frames by four or five small sticks, four or five inches in length, placed crosswise of the frames in order to provide the bees with passageways

from one frame to another. The top of the hive is warmer than the lower part, and bees will, therefore, cross over just under the mat when it would be too cold to do so at the bottom of the hive.

Tray of Leaves on Top.

Above the mat should be a four- or five-inch tray of leaves. This tray is made slightly smaller than the telescope cover so that the cover will slip over easily. The ends of the tray are not quite level with the sides, thus leaving a better chance for ventilation and escape of moisture. On the bottom of the tray is burlap secured to the sides by wooden strips nailed on the lower inside edges. Fastening the burlap in this way allows the tray to fit tightly to the top of the hive, and prevents the wind from whistling in under the tray.

Size of Entrance.

The entrance should be contracted to two or three inches by $\frac{3}{8}$ inch, and should face away from the prevailing winds, which are usually from the north and west.

Need of Windbreaks.

On the windward sides of the colonies there should be shrubbery, trees, buildings, or even a high board fence with two-inch spaces between the boards so that the winds will be more or less broken up before reaching the hives.

A Few Last Suggestions.

Before leaving the colonies for winter all leaky covers should be mended and all hives given a good foundation up a few inches from the ground. They should also be left with a slightly forward tilt so that no water may collect inside.

From this time on thruout the winter, and until May in the Northern States, the colonies should not be disturbed in any manner, but left entirely alone; and if our directions have been carefully followed, the beginner need waste no time in worrying, but may rest assured that his colonies are in good condition.

The End of Beginners' Talks.

With this issue we complete our series of "Beginners' Talks." We shall, however, continue to publish articles that we consider especially helpful to those just beginning the work of beekeeping; and if any such have questions which our "Talks" have not cleared up, we shall take pleasure in answering these thru Gleanings or by personal letter.

ON page 956 of the December issue I said: "We are told by competent authority that more gasoline is being used just now every day than is produced by the whole wide world, and we get along only by drawing on our reserve stores.

How long can this last?"

At the time I made the above statement I felt sure that a crisis was coming, both on coal, gas, and gasoline—more especially on the latter. I was moved to make the remark, largely because of the tremendous traffic in automobiles on Sunday, especially when the weather is fair. Even on the country road that goes past our home, automobiles were flying past so thickly and with such speed that I felt sure that few if any of the occupants were on the way to public worship, even if they did seem thicker than ever about church time. And I felt, again and again, that a large part of this waste of gasoline was unnecessary, especially so far as the Sunday traffic was concerned.

Now, I suppose I hardly need tell anybody who lives in our United States what happened on the first Sunday in September, 1918. A proclamation was issued, requesting that all pleasure trips on Sunday be stopped. Greatly to my surprise as well as pain, church-going was not even mentioned in the exceptions to the rule; and while I felt pained to think how it would interfere in many cases with church attendance, I felt glad to witness the alacrity with which our people, so far as I know, throughout the land, acquiesced in the rule. As it was brought about to win the war, there was nothing for patriotic people to do but to choose some other way to get to church or stay at home. What interested me particularly was that *electric* automobiles did not require any gasoline, and, of course, they were permitted to go as usual the same as horse-drawn vehicles. We are told that in the city of Cleveland close to 1,200 electrically propelled automobiles were on the streets. Now, this was well; but at the same time every one of those 1,200 autos depended on the consumption of coal, gas, or gasoline indirectly. I need not tell you there is almost as much worry,



Who hath gathered the wind in his fists? who hath bound the waters in a garment?—PROV. 30:4.

I will give unto you a land flowing with milk and honey—LEV. 20:24.

Butter and honey shall he eat, that he may know to choose the evil from the good.—ISAIAH 7:15.

if not quite, about the shortage of coal for the coming winter; and the wells that are producing *gas* in a large part of our country are giving out more or less. It is probably only a question of time when something *must* take the place of gas, gasoline,

or coal. Of course, quite a little is being done about clearing up stumps and useless trees in what remains of our forests. And here comes in the wind once more.

With the above preface I am ready to take up my travels in North and South Dakota, as given in our last issue. In my closing remarks I spoke of the expense of storage batteries. My good friend Forrest, mentioned in our last issue, has some storage batteries of his own make; and for stationary purposes I think they may do very well. When I asked him how he got his lead in porous shape for the leaden plates of the battery, he said he poured melted lead into water, and then flattened it out so as to make his plates.

After leaving Wyndmere, N. D., I called on O. J. Seiler of Jamestown, N. D. Mr. Seiler has recently installed one of the electric windmills. It is up on a little hill near where his various buildings are installed in the center of his great farm. Perhaps I should mention that, on account of the severe wind in both of the Dakotas, most residences have a plantation of trees about the buildings, barns, etc., to cut off these fierce winds from the northwest. Well, in this region there are a few native trees along the streams and rivers. Quite a good-sized stream runs thru the Seiler farm; and some beautiful large forest trees are found along this stream. As a protection, both to the stock and the people, the barns and other buildings are located down in the valley close to the stream. For this reason the electric current from the mill has to be carried quite a little distance by wire. Well, I can hardly take space to tell you of the different kinds of machinery worked by power from that windmill. I can give you some idea of it by telling you that his storage battery consisted of 90 Edison cells. I think he told me that he paid something like \$800 for the batteries alone; and these batteries store up suffi-

cient power to run almost any kind of farm machinery. Some place where I visited they told me they had toward a hundred head of cattle and horses on the one farm. It may have been the Seiler farm or it may have been some other. I think there are about a hundred pigs, big and little, on that same farm; and the electric current did almost everything where power could be needed in caring for this big stock farm.

By the way, I was surprised to find that on the Seiler farm the sun did not set until 9:15. In fact, friend Seiler says they can work by daylight, during the long days, clear up to 10 o'clock. And, again, about 5 o'clock in the morning it was light enough to go about. Of course, you will remember what has been said about "daylight saving." If you want more daylight than we get down here, just move up to North Dakota and you can have 17 hours with light enough to work, and only 7 hours of darkness. By the way, it was a common thing to see harvesting machines working out in the fields between 8 and 9 o'clock. I rather suspect that some of the good people up there, sometimes at least, work more than ten hours a day.

My next visit was at the home of our good friend T. A. Williams, Cleveland, N. D. You will find his letter in that same December issue for 1917. You will note there that he has a farm of 2,200 acres. He has been running an electric windmill longer, perhaps, than any other farmer in that vicinity. I was greatly interested in seeing the wonderful things mentioned in that letter above. But there were some other things that interested me as well. First, there were six boys in the family—great, big, stalwart men; and they took such good care of that 2,200-acre farm that the father could run around the country with his up-to-date automobile with such fellows as A. I. Root. One of the boys is in the navy; but he was at home when I was there, on his furlough.

By the way, lest you imagine that the farmers do not have any bad luck up in the Dakotas, I will mention that, notwithstanding they had had plenty of rain for the crops in and about Wyndmere, yet around Cleveland, 60 or 70 miles further west, they had had a severe drouth; and the drouth was finally broken, just before I got there, by a hailstorm 15 or 20 miles wide and 40 or 50 miles long, more severe than any previous one on record. Friend Williams' crops on his whole 2,200 acres were pounded down until the grain or heads of grain were cut off so that a great part of his crops, he thought, would not pay for harvesting. The wheat straw was standing

up, but, strangely enough, the hailstorm had cut most of the heads off, and there they were down on the ground. Some of the fields that were not hurt so badly were harvested with what I think they call a "header." It cut off the heads—at least what heads were remaining after the hailstorm. There were other places where the damage was so great that there was nothing to do but to plow it up for another crop; and I was greatly delighted to see those six boys manage the great tractor that pulled ten plows. It was run by means of a kerosene engine, and it was my privilege to stand on the machine while it went around the half-mile strip, turning ten furrows at once.

I have many times felt sad to think that the old good-sized families were getting to be out of fashion; and I was wondering if the war would not in some way help us to get back to the Puritanical style. I was the middle one in a family of seven, and we have five of our own. I have many times wondered what would have happened if we had had only one or two children or none at all. Well, it was positively a delight to me to look at and become acquainted with the six great, strapping boys or men; and I hope no one will object if I will say it was also a great privilege and a delight to talk with the one grown-up sister of the six boys. And it was *also* a delight to get acquainted with Mrs. Williams, and look over their beautiful home. I think it has been recently built and installed. With the advantage of electricity they have all modern appliances and improvements, some of them more up to date than you will find in the best city homes. The storage battery is in the basement, where they have an up-to-date furnace to keep every bit of that beautiful country home comfortable and happy, even during zero weather.

I forgot to mention that there was one plant on that big farm that was not much hurt by the hailstorm. That was his 30 acres of sweet clover. Of course it was pounded down into the ground; but it was already putting out new shoots when I was there, and promising to make the field in just a few days as green as ever. Friend Williams tell us in his letter something about his beekeeping. He has not very many bees as yet. In fact, he was so greatly in need of more that he sent the money to somebody for ten colonies of bees to be shipped in; but the beekeeper, after keeping friend Williams' money until the season was over, sent it back, saying he had been unable to fill the order.

Well, when we sat down to dinner friend Williams exhibited a Langstroth frame

filled and beautifully capped over with sweet-clover honey. In his honey-room he had a pile of hives not quite as tall as the one on the cover of our issue for September; but each hive contained nine or ten combs beautifully capped over, like the one of which I have been speaking. Well, they cut out a chunk of this same comb of honey for dinner. Now, I suppose the beautiful bread we had, was made from wheat of their own raising. It was not only the very nicest bread I ever tasted, but that sweet-clover honey was certainly the most delicious sample of honey that it was ever my privilege to put in my mouth. Mrs. Root was not there at the time, or else perhaps I would not dare say so, because she would say I was saying the same thing almost every day. To cap all, friend Williams showed me the nicest workmanship in hives and frames I ever saw. They were made by F. C. Bennett, who has a hive-shop in Jamestown. His arrangement for wintering is substantially a beautiful chaff-packed hive. With his 30 acres of sweet clover, of course there is a big opening for a good-sized apiary. In fact, the frame he exhibited indicates that the bees were short of room and had bulged the comb and filled every crevice in the hive with that beautiful well-ripened sweet-clover honey.

Just here I wish to remark that letting honey stay in the hive until the season is over produces a much better quality of extracted honey than where it is taken out during the working season, as we used to do.*

In our last issue I spoke of the level wheat fields around about Wyndmere. The country around Jamestown and Cleveland is quite rolling, and it seemed to me that the locality is not so good for grain-growing as the eastern part of North Dakota. In fact, George told me that their particular locality was so celebrated for its great grain fields that it had been called the "bread-basket of the world."

On my return trip I visited the town of Mitchell, S. D. I have before mentioned on these pages that I have for many years owned a tract of half a square mile a mile out of Mitchell. This tract is a mile long, east and west, and a half a mile wide. On the north side of the strip a roadway was laid out years ago, but it is now unused, probably because there is a better road near by without hills and gullies. Well, a friend of mine who has charge of the place under-

took to run thru this old roadway with his automobile, but he was obliged to give it up and turn back when about half way thru. Now comes something of importance I want to talk about. This old unused road is, a great part of it, covered with a tremendous growth of wild sunflowers. I think I am safe in saying that many of them were as high as the automobile. They were not yet in bloom at the time of my visit; but they showed such rank luxuriance that I began wondering whether some use could not be made of them for feeding farm stock. By the way, there is a beekeeper, Mr. J. W. Anderson, who has a farm adjoining, and a bit of his best ground had been allowed to grow up also to these great rank weeds—at least I believe they call them so there. The stalks were so heavy, and they grew so thickly together, that it would bother anybody to push his way thru. I could not find when there that an attempt had been made to utilize these wild sunflowers; but soon after I arrived home I found in the *Ohio Farmer* for July 20 the following:

SUNFLOWERS FOR SILAGE.

For the past three years I have been making an interesting experiment. Since it has turned out well it might not be out of place to give the benefit of the result to others. The experiment consisted of the use of sunflowers for silage.

Three years ago we put both corn and sunflowers into the silo; in the following winter we fed the silage to our dairy herd. The result was interesting and important. The cows ate the silage with more relish than they did pure corn silage. There was an increase in their milk flow and a marked change in the color of the milk. It became quite yellow, resembling the color of the milk of cows upon June pasture. It also remained the same color during the entire time when this silage was fed.

PLANTING THE CROP.

The crop was planted just as ordinary silage corn. The seed was composed of equal parts of sunflower and silage corn seed. The seed was planted with a corn planter and the corn was cultivated as a field of corn would be. About the first of September the sunflowers began to open and about a week later the entire field looked like a mammoth flower garden. The crop was allowed to stand until the tenth of October when nearly all the sunflowers were ripe.

HARVESTING THE CROP.

The corn and sunflowers were cut with a corn harvester, shredded and put into the silo. All parts of the sunflower plant were put in—stalk, leaves and head. Many of the stalks were an inch and one-half in diameter at the base, and from seven to nine feet tall.

FEEDING THE SILAGE.

The silage was fed just as corn silage, although less was required of the sunflower and corn silage than that of the pure corn. Sunflower seed is very rich in oil and is a very "filling" feed. Many people watched the cows eat the silage and were astonished to see them eat all of the stalk, for the butt of the stalks looks rather coarse and hard. However, these pieces of stalks were well soaked with the juice of the silage and the cows consumed every particle of the silage with relish. We have tried the experiment three different years and each time we have obtained similar results.

*Ernest, who overheard the dictation of the above, tells me to add that leaving the honey on the hive until the season is over is getting to be a common practice everywhere. See his remarks elsewhere.

ADVANTAGES OF THE SYSTEM.

We found no faults with the system and found many advantages and good points. Sunflowers yield about three times as much per acre as corn. This alone helps out to a great extent, especially in a year which is unfavorable for a good crop of corn. Sunflowers are hardier plants and are easily grown. They also mature earlier than corn, and hence, if the crop is injured by an early frost it will not be a total loss. Sunflowers are able to withstand frost much better than corn. If it is impossible because of weather or labor conditions to fill the silo before frost the sunflowers do not dry up and break into fine pieces as corn does when that crop is frosted.—C. M. REED, Lake County, Ohio.

After reading the above I told the children and grandchildren I was going to visit that man, C. M. Reed, Perry, Lake Co., just as soon as I could get around to it. I submitted a copy of the above to our good friend Prof. Thorne, of the Ohio Experiment Station, and here is his letter in regard to it:

Dear Sir:—Replying to yours of the 21st, I would say that Dr. Wiley published in 1901 a "Bulletin No. 60 of the Division of Chemistry," in which he quoted from the New York, Maine, Vermont, and Canada experiment stations results of experiments with the sunflower. His conclusion from these was that the sunflower is a good feeding-stuff. In the *Jersey Bulletin and Dairy World* (Indianapolis) for Nov. 7, 1917, is an article on using sunflowers in the silo. From these I judge that the claims made in the slip you enclose are justified, except that the statement in the last paragraph that sunflowers yield about 3 times as much per acre as corn should be reversed, as we have no other crop that yields as much feed to the acre as corn, and the experiment stations quoted generally state that the yield is less than that of corn.

Yours cordially,

CHAS. E. THORNE, Director.

Wooster, Ohio, Aug. 26, 1918.

On receipt of the above I applied to the *Jersey Bulletin* people, and here is what I find in their issue for Nov. 7, 1917:

SUNFLOWERS AS A SILAGE CROP

When one gets to practicing intensified farming such as is followed in the Grand Valley, where the acreages are very limited, he gets to using his head and doing a lot of figuring to make the most feed possible grow on each acre of cultivated ground. Feeds produced upon small farms where land values are high, very high, must, of course, cost more than the same feeds produced upon large areas where lands are cheap and the labors necessarily are performed upon a big scale.

After some experimenting and a lot of study and reading, we came to the conclusion that to be successful in the dairy industry here it was necessary to adopt a breed of cows that would furnish the finished product, either milk or butter fat, at the least possible cost of production. Hence our adoption of the Jersey as the one breed suited to the conditions existing here.

After some more experimenting we have now come to the conclusion that sunflowers are the ideal dairy feed, just as the Jersey is the ideal dairy breed.

Late in the spring of 1916 we planted a small plot of ground to Russian sunflowers, and also persuaded a neighbor to do the same. At that time we did not have a silo, so when harvesting time came we cut the crop, putting it into an old unused outside cistern and let the mass ferment there. We

were perfectly satisfied that we had stumbled onto something that was going to make good as a dairy feed after we began feeding the silage.

The neighbor put his sunflowers into a silo and did not get them all fed out before his corn was ready to put up, so the corn was run in on top of the sunflowers. When the corn was fed out, and the change made to the sunflower silage, there was a decided increase in the flow of milk. Naturally, we wondered why, but after a study of the chemical analysis of the sunflower plant in the green state as compared with the analysis of the corn plant in the same stage, we came to the conclusion that it must be because of the fact that the plant was richer in protein and in carbohydrates, two food nutrients necessary to the production of milk.

Late last fall we erected a silo, so this year we had a place to put our crop of sunflowers, for of course we planted some last spring. After the crop was off the ground and the manure out of the yards, the plot of ground was again pressed into service for a second cutting of silage from the plant that has made Kansas famous. It only takes about 60 days to mature a crop to the siloing stage.

The ground is prepared and the crop planted very much as we plant corn, only thicker. On alfalfa sod ground this year that yielded us 30 tons to the acre, we planted in rows 32 inches apart with two seeds in hills 10 inches apart. Cultivation and irrigation were performed practically the same as for corn. The plant grows very slowly for the first two or three weeks, but say, after that the eucalyptus of California is not in it.

Before blooming, the pith in the stalk is sweet and very succulent. After the pollen appears, however, the resin flavor develops very rapidly, so we have believed it best to cut for the silo just as the field begins to break into bloom. However, this resinous flavor may all disappear after the mass has gone thru the fermentation stages, so there will be no danger of tainted milk. If this is true, and the plants are allowed to mature the seeds, there will be even more protein, for the seeds are very rich in that feed. We have noted that the mature green plant will produce tainted milk when fed to cows. They eat the plant very readily at any stage of growth, if it is run thru a silage or fodder cutter.

A person would naturally suppose that a crop producing such a prodigious tonnage would deplete the soil very rapidly, but this does not seem to be true. Last year where sunflowers grew, corn this year is bigger and a better crop generally than it is where corn was grown last year. Wheat growing this year where sunflowers and corn grew last year threshed out more bushels per acre where the sunflowers were than it did where the corn was. Apparently they feed on something not necessary to the best growth of either wheat or corn. In cutting into the silo we have found it best to cut in as short lengths as possible, one-fourth inch is best, and tramping thoroughly; keeping the center fullest, crowned to a height of about a foot. We have made up our mind that the silo is no place for a slacker. The man, or rather men, must be goers in order to have a good job of tramping done.

In feeding the sunflower silage, it will be found that cows can not, or at least do not, eat as much in bulk as they will of the corn silage. We believe this to be due to the fact that it is richer in feed value. We have found feeding the silage to be more like feeding a concentrate rather than a roughage.

Nov. 17, 1917.

GEO. LAGRANGE.

Below is something up to date from the same party:

Dear Sir:—In the article referred to in *The Jersey Bulletin* I intended to say that the sunflowers which yielded 30 tons per acre were planted on alfalfa sod, intending to convey the idea that on

poorer soil the seed should not be planted so thickly. You will note the article is on "Sunflowers as a Silage Crop" and the only reference that is made to alfalfa is in speaking of the sod ground on which the big crop was raised. The sunflower is getting to be a great silage crop in western Colorado. The county agent of Montrose County ran an excursion one day recently to that part of his county where something over 300 acres were growing. This is the first year of sunflower planting in that county; but, wherever the crop has been tried, it has been voted a success. Montana had such good success with their trial plots last year that they are publishing a bulletin on the subject. I have noted bees take kindly to the flower; but as it is impossible here in the orchard districts to raise the bees (on account of the spray poisoning), I know nothing of its value as a honey plant. Throughout this inter-mountain country where the sunflower has been raised for silage, a yield of from 20 to 40 tons per acre has been reported, notwithstanding the statement of Director Thorne.

GEO. LAGRANGE.

Grand Junction, Col., Sept. 7, 1918.

BOTH MILK AND HONEY FROM ONE AND THE SAME PLANT.

Now, friends, you can see what I am driving at. Forty years ago or more we sold considerable quantities of sunflower seed as a plant furnishing not only honey but valuable food for chickens; and I have just searched the index in the back volumes of GLEANINGS from Vol. 1 to Vol. 46 and found more or less about sunflowers as a honey plant. Some seasons they have yielded considerable quantities of honey; at others, little or none. One California writer recently told us that his crop of white honey was seriously injured by the mixture of dark honey from sunflowers. He said the sunflowers gave an unusual yield that season. I found in our neighborhood a little patch of sunflowers comprising perhaps an eighth of an acre in full bloom. When the weather is warm enough it is well covered with bees, and they gather both honey and pollen from the flowers. I am told that an experiment station somewhere in Canada put out a bulletin some time ago in regard to sunflowers for silage, and gave it a very high recommendation. If any of our readers can give me full information in regard to sunflowers for both milk and honey I shall be especially pleased.

TRANSPLANTING CORN.

On page 437, GLEANINGS for July, I gave you a picture of the way I tested my seed corn; and you will notice three grains were placed opposite each ear of corn. Well, when these three grains got to be four or five inches high they looked so handsome and thrifty, owing largely to the rich compost and frequent watering, it seemed too bad to destroy them; and, as we had some ground furrowed out for planting early potatoes, I took them up and planted them

out as we do cabbage plants, about the proper distance for field corn. Well, about the middle of August I had beautiful hard yellow ears ready to gather for my chickens. Of course, it would not pay to fuss thus with field corn unless there was some particular reason for wanting some nice new field corn extra early, say for grinding in your little home mill to have home-made corn meal, which, by the way, we think a great deal nicer when it is made from corn right from the field. Well, at the time I tested the field corn I also tested sweet corn for planting in the garden; and this sweet corn was two weeks ahead of that planted outdoors. I think it is a very good idea to have a little sweet corn started indoors and transplanted in this way so as to get a little ahead of the regular crop.

Just now the agricultural papers are urging the farmer to select his seed corn from the field, especially in view of the scarcity and high price and *poor quality* that prevailed last spring. Well, in localities where there is trouble from early frost the transplanting outlined above, just for securing seed corn, will, I am sure, pay big. Give the little corn-plants some of your best ground and give them the best care. Why, one of our agricultural papers just now has said that a farmer might make as high as \$75.00 a day in taking time at just the right stage of the maturing corn to select the very best ears for planting.

SOAPSUDS AS A FERTILIZER.

If you will turn to page 438 of the July GLEANINGS, you will find a picture of a bed of extra-early potato plants. At the upper lefthand corner there is an indistinct view of some little plant boxes. These boxes contain little plants of Netted Gem cantaloups. After the potato plants were removed from the bed, four hills of melons were taken from these little boxes and put in place of the potatoes. Well, in our locality we had, along about the first of August, a tremendously hot and dry spell. For a few days it seemed as if the garden was going to be an almost utter failure. With the tremendous heat we had, both day and night, the Grinnell sprinkler did not seem to amount to much. The fierce heat of the sun dried up the water, no matter how much we put on; and the water from our waterworks this year has been unusually expensive. Well, as these four hills of melons in that potato-plant bed were close by where Mrs. Root does the washing, once a week they were treated to a tubful of strong soapsuds. I wanted to give soapsuds a good test (while potash is so scarce)

in regard to its value as a fertilizer. Well, these four hills of melons, two plants in a hill, have now nine Netted Gem cantaloup melons, about the finest I ever grew; but as they are not yet ripe, we have not tested the quality.

Just a suggestion here: These fine hills may not be altogether the result of the potash. I think I have mentioned before, that, unless I have some kind of exercise in the garden to start the perspiration every forenoon and afternoon, I do not feel "real spry." Mrs. Root frequently scolds about my getting my shirt and underwear so badly soiled, even if I do have a sponge bath every night before I go to bed. Of course, working in the garden accumulates quite a little dust, especially during extremely hot weather, to go along with the perspiration.

Well, is it not likely that this same perspiration is valuable as a fertilizer? The good Book says, "In the sweat of thy face shalt thou eat bread;" and I have sometimes thought it fell on me rather heavily, especially in my old age. The color of the water in a tubful of soapsuds indicates that there is more or less "fertility" in it of some sort; and one of the morals of this story today is that, instead of letting the soapsuds of washday go down into the drain, you should put it on your melons or some other garden stuff you want to get under "high pressure." I believe the best time to put on soapsuds is just about sundown or a little after; then when the ground gets just dry enough, mellow it up again with a hoe.

By the way, I have sometimes mentioned my fruit suppers which I enjoy so much. Well, nice cantaloups and "baby water-melons" seem to fit in very nicely in that fruit supper; and I feel very much better after a supper of fruit and melons, and nothing else, than when I go to a picnic and eat all sorts of stuff so as not to appear to be singular or different from other people.

A NEW VARIETY OF TALL WHITE SWEET
CLOVER THAT FURNISHES HONEY
IN 90 DAYS.

Some time about the last of April Prof. H. D. Hughes of the Iowa Agricultural Station, Ames, Ia., sent me a few seeds of a new white sweet clover that he thought might do wonderful things, not only for beekeepers but for stock-growers as well. I planted a few seeds at once in a box, gave them good care, and set them out in the garden some time in May. Notwithstanding the terrific heat and drouth they

began to bloom in about 90 days; and just now, this 14th day of September, some of them are as high as my head, and covered with bees and bloom. On some of the plants the seeds are sufficiently matured so they may be gathered and planted; and if any reader of GLEANINGS will send me an addressed and stamped envelope, I will mail him a few seeds. If planted at once, in most localities, in good, rich soil, I think they will make enough growth to stand the winter. A little mulching may help matters.

And there shall in no wise enter into it anything
unclean, or that maketh an abomination and a lie.
—REV. 21:27.

Great victories are coming just now so thick and fast that I begin to think I shall have to stop astonishing the good friends with temperance news; for before I can get it before you in print it is news no longer, for everybody has heard of it and more besides.

Just a few days ago we were congratulating ourselves on having national prohibition by 1920; and with the progress being made it seemed as if it *might* come earlier—possibly by July 1. Then a little was said about May 1. Then the papers talked about Jan. 1, and finally in the *Cleveland Plain Dealer* of Sept. 7 we read the announcement that on Dec. 1, 1918, the brewers of the United States would shut up at once, and during the war; and this victory is not exactly like the one in regard to the distilleries, for beer can not be made up ahead, as it spoils in a little while. I am ashamed to acknowledge that I know something about it "by experience."

And now while we are rejoicing and thanking God for what is going to happen Dec. 1, the different breweries thruout the land are announcing that, as they have got to quit any way, they might as well commence to line up at once. I have since run across another statement, I think to the effect that over 5,000 saloons in the city of New York have also concluded to commence, at once, to wind up. A saloon without beer would be like Hamlet without Hamlet.

May the Lord be praised for the news at hand this 13th day of September; and nobody knows just what great things may be done before your eyes rest on this printed page.

Is there a voter in the State of Ohio who reads these Home papers who will not strain every nerve to be on hand on the coming election day, Nov. 5, and vote dry?

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Apple Co., 139 Franklin St., New York.

FOR SALE.—Well ripened clover honey in 60-lb. cans, also buckwheat in kegs. Any amount up to carload. E. L. Lane, Trumansburg, N. Y.

FOR SALE.—Well ripened buckwheat honey in 160-lb. kegs, price 21c per pound.

Seward VanAuken, Delanson, N. Y., Rt. 3.

FOR SALE.—Our new crop honey, clover-basswood, blended by the bees on the hives. One of the best lots on the market. It is packed in new 60-lb. tin cans, two to the case. Sample 25c to be deducted from the first order.

D. R. Townsend, Northstar, Mich.

RASPBERRY HONEY.—Blended with a small amount of goldenrod honey. It is thick, ripe, rich, and delicious, first class in every respect for table use. Put up for sale in 5-gal. tin cans, and 1-gal. cans. Price in 5-gal. cans, \$15.00 a can; in 1-gal. cans, \$3.50 a can. Sample by mail for 20c, which may be deducted from order for honey.

Elmer Hutchinson, Lake City, Mich.

RASPBERRY HONEY.—This honey has just enough buckwheat honey mixed with it to color it some. It is from one of the Hutchinson apiaries, and has all the fine qualities and flavor that the Hutchinson honey is noted for. It is put up for sale in 60-lb. cans. Price, 25c a lb. Sample by mail 20c which may be applied on purchase of honey.

John Hutchinson, Lake City, Mich., R. D. No. 2.

HONEY AND WAX WANTED

Small lots of off-grade honey for baking purposes. C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

Comb honey wanted, address 153 Box 323, White Plains, N. Y.

Cash at your bank for carlots and less of comb and extracted honey.

Wesley Foster, Boulder, Colo.

WANTED.—Light extracted honey, state price f. o. b. your station.

I. J. Stringham, Glen Cove, N. Y.

WANTED.—Comb and extracted honey, car lots and less. Mail sample, quantity and price.

W. Morris, Yonkers, N. Y.

WANTED.—Comb and extracted honey, also beeswax. Send samples.

C. S. Fryer, 386 Halsey St., Portland, Ore.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston.

M. V. Facey, Preston, Minn.

WANTED.—Extracted honey, all kinds and grades for export purposes. Any quantity. Please send samples and quotations.

M. Betancourt, 59 Pearl St., New York City.

WANTED.—Extracted and comb honey. Carload or less quantities. State particulars by mail and sample of extracted.

Hoffman & Hauck, Inc., Richmond Hill, N. Y.

WANTED.—2,000 pounds sweet or white clover extracted honey. Send sample and price. Geo. Herrick, 11225 Vernon Ave., Chicago, Ill.

WANTED.—Well ripened amber and clover honey; state price, how packed and send sample. L. P. Zimmerman, 436 E. Market St., Louisville, Ky.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

We are in the market for honey and beeswax. Send your best price on comb honey and a sample of extracted honey. State quantities you have, also style, size, and weight of package or section. Charles Israel Bros. Co., Inc., 486-490 Canal St., New York City.

WANTED.—Beeswax. We will pay for average quality beeswax delivered at Medina, 36c cash, 38c trade. We will pay 1 to 2c extra for choice yellow. Be sure your shipment bears your name and address as shipper so we can identify it on arrival.

The A. I. Root Co., Medina, Ohio.

FOR SALE

HONEY LABELS.—Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Conn.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

SEND TODAY for samples of latest honey labels. Liberty Pub. Co., Sta. D. Box 4E, Cleveland, Ohio.

My entire bee and queen business for sale at once. If interested apply to

M. Bates, Greenville, Ala., R. D. No. 4.

FOR SALE.—40 lbs. thin super foundation, in lot of 5 lb. or over, 70c per lb.

E. S. Robinson, Mayville, N. Y.

FOR SALE.—Hand-gathered sweet clover seed now ready. Write for prices.

E. C. Bird, Boulder, Colo.

FOR SALE.—One Dadant's uncapping can, good as new, \$7.00; 5 cases 60-lb. cans, used once, \$25. Mason, Mechanic Falls, Me.

FOR SALE.—Cowan rapid reversible extractor, \$18.00. Single comb white leghorn cockerels, \$1.00. Lorenzo Clark, Winona, Minn.

Pennsylvania Distributors for Root Bee Supplies, save time and transportation expense on all standard hives, sections, etc., at catalog prices.

Prothero, Bailey & Goodwin, Dubois, Pa.

FOR SALE.—Good second-hand 60-lb. cans, two to the case, at 60c per case f. o. b. Cincinnati. Terms, cash with order. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, Ohio.

CANADIAN BEE SUPPLY & HONEY CO., Ltd.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—All or part interest in a well-established queen-rearing business. Scarcity of help reason for selling. Can not keep up with what help I have left. 16 miles from Corpus Christi (The Naples of the Gulf), high healthy location. A good proposition for the right party with small amount of capital. Reference furnished.

Nueces County Apiaries, Calallen, Texas.

FOR SALE.—You can make your own comb foundation and earn big money making it for others. New, easy, rapid process. Machine and all apparatus complete with full instructions, \$100. Wax worked on shares or for cash.

J. J. Angus, Grand Haven, Mich.

FOR SALE.—300 deep extracting supers, 8-frame size, dovetailed, good combs, mostly wired, at \$2.00 each. Or I could furnish bottoms and covers for 200 and sell as hives at \$2.50 each. 100 extracting supers at \$2.00, all painted and in good condition; 7 Hoffman frames for extracting, free from disease. Chester E. Keister, Clarno, Wis.

WANTS AND EXCHANGE

Bees in exchange for good So. Florida land. Fine location for bees, over 10,000 acres in oranges. A. L. Heffinger, 1532 Olivewood Ave., Lakewood, O.

WANTED.—Colonies of bees in lots of anywhere from 5 to 500. State lowest cash price wanted. H. G. Quirin, Bellevue, Ohio.

Bees and supplies for lot in a fast-growing city in Penn., value \$600. Lot is in the business section and is held as an investment. Also have large incubators and poultry supplies that I will trade. Ed. Mrovka, Collinsville, Ills.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

REAL ESTATE

FOR SALE.—About one acre well stocked with bees and chickens, 3-room house, porch, cistern, other out buildings. Will sell cheap if sold at once. Bad health reason for selling.

L. D. Ogle, Box No. 54, Lowell, Ohio.

A small California farm earns more money with less work. Raise the crops you know about—alfalfa, wheat, barley, etc.—also oranges, grapes, olives, and figs. Ideal for dairying, pigs, and chickens. No cold weather; rich soil; low prices; easy terms; good roads, schools, and churches. Enjoy life here. New comers welcome. Write for our San Joaquin Valley, also Dairying and Poultry Raising illustrated folders free. C. L. Seagraves, Ind. Com. A. T. & S. F. Ry., 1927 Railway Exchange, Chicago.

BEAUTIFUL HOME FARM, improved rich soil, well located; good buildings, 100 colonies of bees, up to date; best honey-producing location in the State; not crowded; average for past 7 years, 105 lbs., 5 acres of ginseng and goldenseal, all aged, in fine shape; half artificial shade, half natural. Will sell a part or all of seng-seal. 80-acre farm, \$80.00 per acre; \$7,000 for farm and bees, 150 extracting supers and combs, 150 shallow supers, 2-frame extractor, 2 large honey tanks. Terms, \$3,000 cash, balance time. A wonderful opportunity—a bargain. Reason for selling, poor health.

W. M. Penrod, Ronneby, Minn.

BEEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, R. D. No. 3, Vincennes, Ind.

"SHE SUIT ME" Italian queens; \$1.00 from May 15th to Oct. 15th.

Allan Latham, Norwichtown, Conn.

Hardy Italian queens.

W. G. Lauver, Middletown, Pa., R. D. No. 3.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Courtland St., New York.

Improved queens. All select. Get circular. J. E. Jordan, Morgan, Ky.

Golden Italian queens, untested, \$1.00 each, six for \$5.00. E. A. Simmons, Greenville, Ala.

Mismated Italian queens at 35c each for sale by C. G. Fenn, Washington, Conn.

FOR SALE.—Bees in 10-frame hive bodies spaced 9 L. frames to the hive, per colony, \$10.00. F. J. Rettig, Wabash, Ind.

Three band Italian queens, untested, \$1.00; select untested, \$1.25; tested, \$1.50; select tested, \$2.25. H. W. Fulmer, Box G, Point Pleasant, Pa.

FOR SALE.—Three-band Italian queens. Untested, \$1.00; 6, \$5.00; 12, \$9.00. Tested queens, \$1.50 each. Robt. B. Spicer, Wharton, N. J.

Finest Italian queens, \$1.00 each; 6 for \$5.00. My methods free. J. W. Romberger, 3113 Locust St., St. Joseph, Mo.

FOR SALE.—Fine Italian queens, 75c each, \$8.00 per dozen. Safe arrival guaranteed. T. J. Talley, Greenville, Ala., Rt. No. 3.

Tested leather-colored queens, \$2.00; after June 1, \$1.50; untested, \$1.00; \$10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

FOR SALE.—Three-banded Italian queens, safe arrival guaranteed. Write for prices, J. A. Jones & Son, Hope Hull, Montgomery Co., Ala.

THREE-BAND ITALIANS ONLY. Untested queens, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50. H. G. Dunn, The Willows, San Jose, Calif.

Three-banded Italian queens at Shenandoah Apiary, ready May 15. Tested, \$1.25; untested, \$1.00; dozen, \$8.00.

S. Chick, Box 16, Rt. 2, Mt. Jackson, Va.

Bright Italian queens, ready April 15th, \$1.00 each. Safe arrival guaranteed. Write for prices of larger quantities.

W. W. Talley, Greenville, Ala., Rt. 4.

GOLDENS THAT ARE TRUE TO NAME. Untested queens, each, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50.

Garden City Apiaries, San Jose, Calif.

FOR SALE.—50 good colonies clean Italian bees, in this good territory, \$300. Extra hives, supplies, and extracting outfit, \$100. Particulars R. O. Dickson, Robinson, Ills.

Italian queens. Golden and 3-banded bred from best selected stock. Untested, each, 65c; 6, \$3.75; 12, \$7.00. Select untested, 75c each. Satisfaction guaranteed. G. H. Merrill, Liberty, S. C.

For short time, will sell a carload of bees, hives, fixtures, \$850, one-half of their value if in a good honey location next May, or to take them up and extract honey, wax, and sell empty hives, enough for two good beeyards.

D. E. Lhommedieu, Colo, Iowa.

Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolans. Tested, \$1.00 each; untested 75 cts. each. Bees per lb., \$1.50; nuclei, per frame, \$1.50. Send your order for bees early.

C. B. Bankston & Co., Buffalo, Leon Co., Tex.

FOR SALE.—125 8-frame one-story, colonies, extra fine honey-gathering strain Italian bees, at \$6.00 per colony, all free from disease with stores for winter and about 500 extracting supers and some extra bottoms and lids, all in first class condition at proportionately low price, f. o. b. station.

W. C. Meiroto, Council Bluffs, R. D. No. 2, Iowa.

FOR SALE.—150 colonies Italian bees in Root's 8-frame dovetailed hives and all necessary equipment for up-to-date beekeeper. For particulars address
C. D. Pritchard, Artesia, Miss.

Golden Italian queens that produce gentle and good honey-gathering bees. No foul brood. Select tested, \$1.25; tested, \$1.00; untested, 75c; 6 \$4.25; 12, \$8.00. No nuclei or bees for sale.

D. T. Gaster, Randleman, N. C., R. D. No. 2.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey gatherers as can be found; each \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

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FOR SALE.—Seven colonies bees in new 10-frame metal cover hives, two coats lead, wired combs on full sheets foundation, free from disease, \$7.00 each; 43 hives, same as above, with frames, used one season, \$1.80 each; 15 wood and wire excluders, 50c each. E. S. Robinson, Mayville, N. Y.

FOR SALE.—My home and apiary in one of the best beekeeping locations in western Pennsylvania. Modern brick home, honey house and bee cellar for 500 colonies. Fourteen acres of good land. Conveniently located to town and schools. A bargain at \$3,500 on terms. Twenty colonies of bees in ten-frame hives included. Numerous supplies at reasonable rates additional. Geo. H. Rea, College of Agriculture, Ithaca, N. Y.

HELP WANTED

Good queen-breeder wanted for 1919. State experience and salary expected, for position in village. Good school, churches, etc. Man exempt from military service preferred.

W. D. Achord, Fitzpatrick, Ala.

Bee man wanted on small isolated mountain ranch in California. Interest in bees for care of same. Two cows and small vegetable garden, house included. No schools or churches. Mrs. H. Sidebotham, 1936 Laguna St., Santa Barbara, Calif.

WANTED.—A sober intelligent man to take charge of an apiary of 500 hives, and increasing, located in Cuba. Must have full knowledge and experience in caring for bees and handling products from same; honesty also required. To such a man will pay good salary and provide comfortable accommodations, etc. For further particulars address
A. H. Tyner, Cuba & Bringas, Camaguey, Cuba.



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Positively the cheapest and strongest light on earth. Used in every country on the globe. Makes and burns its own gas. Casts no shadows. Clean and odorless. Absolutely safe. Over 200 styles. 10¢ to 2000 Candle Power. Fully Guaranteed. Write for catalog. AGENTS WANTED EVERYWHERE.

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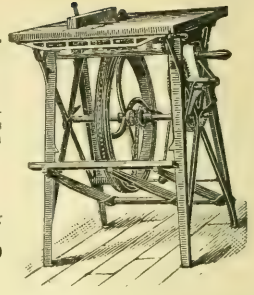
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BOOKS AND BULLETINS

The U. S. Dep't of Agriculture has just issued two bulletins on the subject of wintering bees, embodying the latest ideas of Dr. E. F. Phillips and other apiculturists in the Bureau of Entomology at Washington. One of these bulletins is entitled "Wintering Bees in Cellars," the other, "Protect Bees from Cold." Ask the U. S. Department of Agriculture, Washington, D. C., for these two bulletins.

"THE PEARCE NEW METHOD OF BEEKEEPING."

The majority of beekeepers have picked up methods and suggestions from their predecessors or contemporaries, possibly adding a point or two themselves, and have gradually pieced all together into what they regard as the very best plan of management. Such a system is that given in "The Pearce New Method of Beekeeping." The main idea of the booklet is to have colonies unusually strong, from 100,000 to 200,000 bees, always provided with an abundance of room by being kept in two-story Langstroth hives, which are housed thruout the year in a suitable building. Mr. Pearce is also an advocate of that trouble-brewing "let-alone plan." He leaves them in the fall, with many colonies weighing as much as 100 pounds; then on the first of May he puts on the supers. He says: "Put as many as four or even more honey cases filled with foundation on top of these two hives. Be sure to have enough, letting them go as they please till near the first of November." If this advice is followed indiscriminately, it seems to us, it must result in much chilled brood and many lost colonies. Having such quantities of room, Mr. Pearce holds that swarming will be prevented. Therefore he suggests that anyone desiring increase place on the old stand a new hive of empty combs or foundation, together with a new queen and the four outside frames from the old hive, the four frames of empty combs or foundation removed being placed in the middle of the old brood-nest which is moved to a new location. By so doing, however, the queen would sometimes be treated kindly and sometimes she would be killed. To remove honey from the supers, he places four or five supers over an empty hive arranged with an escape-board above and a bottom-board below. In the spring he uses the Alexander plan of caring for weak colonies, only

instead of removing the upper colony at the end of three weeks, he only removes one comb with the queen, thus making a nucleus, leaving all the rest together in one big colony. Under the heading, "Foul Brood," it is evident that Mr. Pearce is referring only to the American type. His remedy is to put a new hive of foundation on the old stand and smoke the bees until most of them have run into the new hive. The queen is placed in the new hive and the hive covered with a bee-escape board, after which the old hive of brood is placed above. He does not mention the possibility of the escape becoming clogged with dead bees, nor the impossibility of removing the diseased hive to examine the lower one. Of course, if the upper hive were jarred, as it would be if removed, the bees would load up with diseased honey and carry it into the clean hive below. For rearing queens the booklet advises the beginner to feed his best colonies heavily so they will build queen-cells and swarm. Seven or eight days after the first swarm issues he would cut out queen-cells and return them to the hive to hatch, after which they would be placed in nuclei. We regard this as poor advice to be given a beginner. Under certain weather conditions, it would be found that the cells would be all torn down at the end of seven or eight days. Even if they were not, just think of all the trouble and confusion that would arise from all these cells maturing at different times. On the whole, we cannot refrain from the warning that what Mr. Pearce can do, the beginner may not and probably will not be able to do. We accordingly suggest that students of the book absorb the good in the pamphlet, namely, the idea of having large colonies with plenty of room and quantities of stores for winter, and that he discard such suggestions as the giving of four or more supers of foundation the first of May, or the rearing of queens by the natural swarming plan. We know a veteran beekeeper who recently commented on the "Pearce New Method," by saying that if a beginner were to ask him about the "method" he would probably reply like this: "Whatever is good is not new; and whatever is new is not good. Practical beekeepers are generally ready to adopt what is good, but altho Pearce's management has been published several years I don't know of any one who keeps bees on a considerable scale who has adopted it. It may be a good thing for you to let alone, son." (Published by Joseph A. Pearce Co., Grand Rapids, Mich. Price, \$1.00.)

Cans and Shipping-cases

We have a fine stock of 5-gal. cans and shipping-cases; also comb foundation, extractors, honey-tanks, etc.



Quick Shipments.

KRETCHMER MFG. CO. Dept. G. Council Bluffs, Iowa

AROUND THE OFFICE

M.-A.-O.

J. L. Byer ain't said nothin' more about my comin' up there fishin' with him. Perhaps he's grown cold onto me. It's allays been this way—when a feller's down he's pretty much way down and generally pretty much alone by hisself. When Danel was in the lions' den it isn't recorded that there was a whale of a whole lot of people crowdin' up to help him out any. Yet he was all right and the rest all wrong, and he was a pretty skookum man, too. I can stan it if Byer can.

* * *

August was the poorest month I ever see for fishin' and also too the worst for bees stingin'. I got stang time and time and again that month and I couldn't get a bass nohow. Take these two things together both all to oncet and it makes it about the hardest time of year to keep from utterin' some real language and talkin' the way you feel like. It's the hardest time of year for a reformed language user that I know of. That's so, bi Sulphide, too. Bisulphide is just as good a word as church or Sunday-school, and I may just have to use it (separated a little mebbe) sometimes, and I don't want any adverse criticisin', either. When

(Continued on next page)

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A Good Stock of the

Lewis Beeware
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Is at your command at
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We have a market for your honey and
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This shoe is built to meet the demand of an outdoor city workers' shoe as well as for the modern farmer. Built on stylish lace Blucher last. Special tanning process makes the leather proof against the acid in milk, manure, soil, gasoline, etc. They outwear three ordinary pairs of shoes. Very flexible, soft and easy on the feet. Made by a special process which leaves all the "life" in the leather and gives it a wonderful wear-resisting quality. Double leather soles and heels. Dirt and water-proof tongue. Heavy chrome leather tops. Just slip them on and see if they are not the most comfortable, easiest, most wonderful shoes you ever wore. **\$3.85** for shoes on arrival. If, after Pay only careful examination you don't find them all you expect, send them back and we will return your money. Order by No. X15012.

SEND your name and address, and be sure to state size you want. You be the judge of quality, style and value. Keep them only if satisfactory in every way. Be sure to give size and width.

LEONARD-MORTON & CO., Dept 2051, Chicago

Around the Office—Continued

I use it I just mean bisulphide and nothin else at all whatever. If I can't say bi Sulphide once in awhile in bee stingin times and when fish aint a bitin, I am likely to go backslidin on language reform forever. A feller's just got to have a little vent when the bees are a peckin it to him, and no sympathy at home or over here around the office either one.

* * *

Some anonymous sunofagon has tried to sass me by sendin in this one: "Teacher—Name a fisherman mentioned in the Bible. Pupil—Ananias." That may have application to my fishin friend, Ab Lutz, or to F. L. Mason up at Mechanics Falls, Maine, but not to me, so it don't.

* * *

"Last summer I got mad, and I paid right out \$10 for a swarm of bees, hive, super and foundation, and as I didn't know a thing to do to 'em, they made me 75 pounds of fine honey; but since I've been reading Gleanings, I've learned so many things to do to bees (and done 'em, too) that the little fellows look pretty sick, and the results of 15 years of bee efforts are all going to smash. Next time I'm going to read the M.-A.-O. pages and cut out the Roots—if I ever get another start in bees, so I am.—C. E. Weston, Inkon, Ida. [Bi Sulphide, that's what's puttin fat onto my ribs. Just to think of havin people all over this country and out in Idaho preferin my kind of beekeeping combined with fishin to the Roots' and Doc Miller's and Hi Mogul Phillips' beekeeping. I am feelin better. As my old Dad used to

(Continued on next page)

\$30,000 WORTH OF Bee Supplies



All boxed ready to ship at once; 275,000 Hoffman frames, also Jumbo and Shallow frames, of all kinds, 100 and 200 in a box. Big stock of Sections, and fine polished Dovetailed Hives and Supers. I can give you big bargains. Send for a new price-list. I can save you money.

Will Take Beeswax in Trade at Highest Market Price.

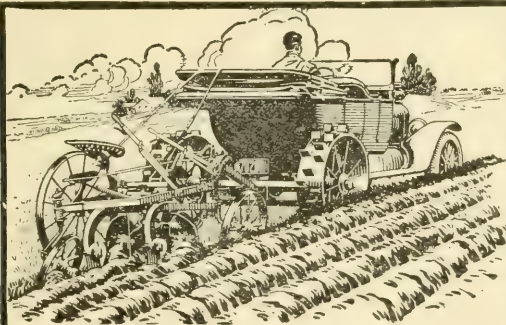
Charles Mondeng

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PATENTS

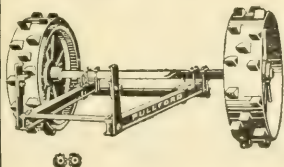
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With **FORD** Or Most
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MAKES a practical tractor out of a Ford or most any other car. Easily attached to or removed from the car in thirty minutes. No holes to drill, no springs to remove. **Practical, Durable, Reliable.**



New FAN DEVICE Prevents Heating

Hundreds WORKING NOW for Satisfied and Enthusiastic Owners

Pulls plows, harrows, drills, mowers, binders, hay loaders, road graders, wagons, trucks, etc. Steel wheels with roller bearings and tires 10 inches wide, two pairs of hardened Vanadium steel pinions, one for plowing and one for hauling speed. A tractor with the reliability and durability of the Ford car. Prompt shipment. Write for catalog.

It was the Pullford attached to Ford cars pulling two 12-inch plows running on Kerosene, equipped with new fan device, that made a most successful demonstration at Fremont, Nebraska.



PULLFORD COMPANY, Box 23C

Telephone No. 84

Walton Heights, QUINCY, ILLINOIS

Around the Office—Continued

say, that feller Weston is solid on the goose.—M.-A.-O.]

This here is Mel Pritchard, our queen-rearer and skunkologist. He's all duded up in this picture. To look at him here, you



Mel Pritchard, Philosopher and Sk. Ologist.

wouldn't think he would go out of his way to pick onto a skunk, would you? He will tho, so he will. But he knows a lot more things. He knows more about queen bees, bugs in general and all outdoors than most

(Continued on next page)

BEES Tested Italian Queens, \$1.50

We furnish full colonies of bees in single-walled and double-walled hives. Nucleus colonies and bees by the pound. Write for what you need.

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"Best" Hand Lantern



A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. **THE BEST LIGHT CO.**
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Queens of MOORE'S STRAIN of Italians

PRODUCE WORKERS

That fill the super quick
With honey nice and thick

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Untested queens, \$1.25; six, \$6.50; 12, \$12.00.

Select untested, \$1.50; six, \$8.00; 12, \$15.00.

Safe arrival and satisfaction guaranteed.

Circular free.

J. P. MOORE,
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Queen-breeder

BEE-SUPPLIES

FALCON LINE

We carry the largest supply
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Lowest Prices, Quality Considered

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Perdue's Southern-bred Italian Queens

that resist disease well — those that resist disease must be hardy, prolific, and hustlers; and they are superior to many as honey-gatherers, and mated for their gentleness. Why not try them and be convinced that you have been losing by not buying them the three bands.

Untested,	one,	\$.75;	six,	\$4.25;	12,	\$8.00;	per 100,	\$60.00
Sel. Untested,		1.00		5.00		9.00		
Tested,		1.50		8.75		17.00		

Satisfaction guaranteed

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Around the Office—Continued

any feller I know of just now. He's a knowledgy cuss all round. I call him Philosopher—when he lets me get near enough to him to call him anything. I am about as congenial and satisfyin to him as a red rag is to a bull. He says I've lied about him and the skunks, but I ain't so very much, so I aint, and he knows I aint. Notwithstandin this, I say Mel Pritchard knows a lot of things and looks like a owl. He's got a ant theory that is a astonisher, and he's tryin' to raise ants like bees and make 'em a blessin to man. I'll bet he's right, too. I tell you again Mel Pritchard is a smart sun-foggon, and he aint bad lookin' at the photographer's.

A earnest seeker after truth wrote into Gleanings not long ago sayin: "How do you determine the longevity of bees? I have seen it stated in Gleanings that queens were bred whose bees were long-lived." It's as plain as the nose on the Kaiser's oldest son's face that this man was seekin real information and clear light on a uncertain bee subject, and also distrustin under his vest some claims of some queen rearers. Waal, what did he get?

His question was put up to Iony Fowls, now one of the chief spokes in Gleanings brains—and she does know a whole lot—and she ups and writes to this man F. R. Davis at Bangall, N. Y., tellin him if he'd take a queen of a different race than hisn and introduce her it would be easy to note how long a time afore the first strain of bees disappeared from the hive. Then she adds this to him: "We must admit that this method of determining the longevity of bees is but seldom employed, and in general practice we fear that the longevity of bees is more or less a matter of guess work. Of course, there are queens that continue to lay

(Continued on next page)

To Our Subscribers:

After this date, Oct. 1, all combinations and premiums heretofore offered with subscriptions to Gleanings in Bee Culture have to be withdrawn. This is made necessary by regulations governing subscription offers of all magazines, issued by the Pulp and Paper Section of the War Industries Board, effective Oct. 1. Accordingly, we give our readers notice to consider any and all of our previous subscription combination and premium offers withdrawn. We expect that the yearly subscription price of Gleanings (straight subscription) may be continued at \$1.00 as heretofore. Watch for later announcements.

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Prompt service and no trucking bills.

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J. B. MASON, Manager.

New England Beekeepers

will find a complete line of supplies here. Order early and avoid delays. Write for catalog.

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The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid

Dealers Everywhere

"Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from

Around the Office—Continued

well even in the fifth year. It would seem quite probable to us that the progeny of such a queen would be long-lived, and if one continued breeding from such queens they might in time produce bees with much greater longevity than stock from which they originally started."

Those are the illuminatin beams of information Davis got from Iony Fowls—and I'm guessin he got about all there is radiatin on the subject, too. But it didn't seem satisfyin to one high muckamuck around the office, so he put off to the queen rearin yard for more penetratin light on the subject and got this from old Philosopher up there: "The longevity of bees is determined by the work they do. Those that hatch at the beginning of the honey flow only live about seven weeks while those that hatch in the fall live thru until spring—seven months. Some bees probably have more vitality than others and can work longer in summer and also winter better. I know of no way of distinguishing one from the other except by observing these qualities. Breeding from queens five or more years old, which would naturally be rather low in vitality, I would think would have a deteriorating effect on their progeny which would more than offset any gain in the line of longevity."

Waal, when this enlightenin elucidashun filtered in from the queen-rearin yard, it started every disputatious sunofagon around the office agoin it on this ere subject of longevity, and there was more talk than you could jam into a session of the great American Congress—and that's some. All the authorities were looked up—Doc Miller, A B C and X Y Z, Doc Phillips, Pellet, Quinby, Langstroth, et cetera. Nothin doin. More disputin all the time, till finally Iony Fowls came down on the queen-rearin' yard's wisdom with this one: "If certain varying combinations of factors produce a given result, the presence of that result does not prove the existence of each one of the factors. In other words, altho longevity may be a factor in the production of good honey gatherers and good winterers, there are also other important factors and the fact that a colony produces a large amount of honey and winters well, does not necessarily prove that they have longevity. If he thinks it does then the burden of proof lies with him. A mere statement should not suffice."

Take that in your pipe and smoke it will you, Mel, if it aint too strong.

But what I am a reviewin the whole case for is to tell that seeker after pure truth, Mr. Davis of Bangall, N. Y., that these old bee wiseakers don't probably know a darned thing about it, so they don't. [See, I had the printer scratch out that word durnd.]

I agree with Mel, and that almost ought to settle it, so it had,—only I don't know what Mel means.

Dr. Miller QUEENS

We are again rearing queens from mothers supplied by Dr. Miller from his apiary. These bees are proving to be very gentle as well as hardy and resistant to Foul Brood. Two queen-breeders not interested in us at all have declared them to be the gentlest bees they ever saw. Our list of customers that demand Miller Strain is growing fast. Remember that we are the only breeders that get breeders direct from Dr. Miller. Can you find a man more able than Dr. Miller to select your breeding queens? Besides that he has the material that he has been working on for over fifty years to select from. Safe arrival and satisfaction guaranteed.

One untested, \$1.00; 12 for \$10; 25 or more, 75c each.

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We may have some pound packages to offer after June 15th but are not in position to say until about June 10th to 15th. Safe arrival and satisfaction guaranteed.

One untested, 75c each; 12 to 100, 60c each. Full colony in 8-fr. hive with tested queen, \$9.00; 10-fr. hive, \$10.00. Can make prompt shipment of these.

The Penn Company Penn, Lowndes Co., Miss.

SPECIAL PRICES ON SHIPPING CASES

THIS FALL, we are making a rock-bottom price on our basswood comb honey shipping-cases. These cases have a one-piece cover and bottom, with corrugated straw-board in the bottom, and two-inch glass front and nails, all complete. They come in two sizes, for either 12 or 24 sections.

Cases for 12 sections	- - - - -	\$12.00 per 100
Cases for 24 sections	- - - - -	20.00 per 100

These prices are lower than you can obtain elsewhere, and the cases are of the highest quality, both in material and workmanship.

"Hivofelt," our especially prepared mat of flax fibre, is the best method of insulating your hives against cold. It is a necessity in a northern climate, and will be needed with the first cool weather. Let us send you a free sample.

We also have a full line of five and ten pound friction-top pails, and five-gallon square cans. These come one or two in a box. Write for our prices for immediate delivery. Order now and save money.

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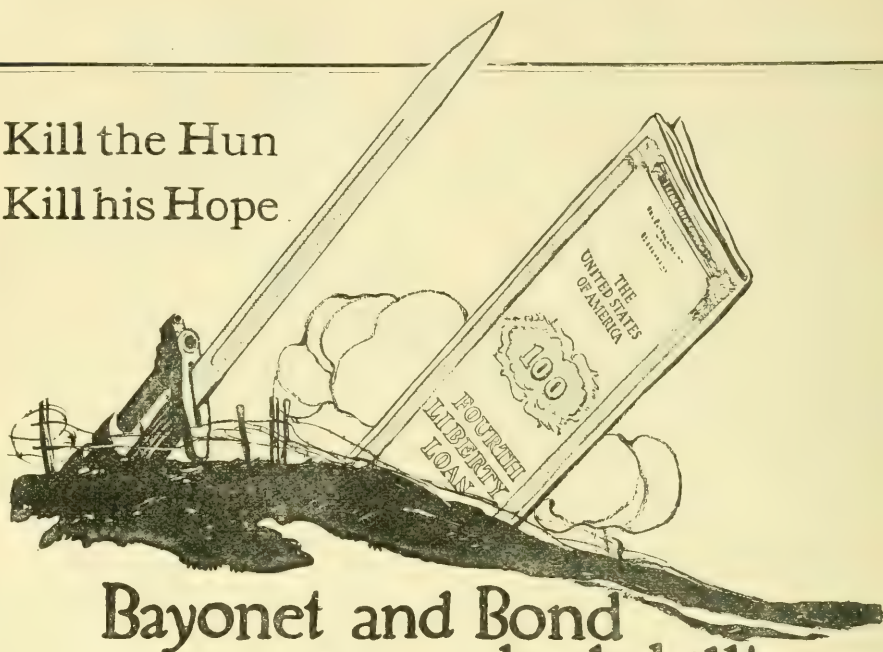
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Bayonet and Bond —both kill!

ONE KILLS the Hun, the other kills his hope. And to kill his hope of victory is as essential right now as to kill his fighting hordes. For while hope lasts, the Wolf of Prussia will force his subject soldiers to the fighting line.

We have floated other loans, built a great fleet of ships, sunk pirate submarines, sent our men across and shown the Kaiser's generals what American dash and grit and initiative can do. The Hun has felt the sting of our bul-

lets and the thrust of our bayonets. He is beginning to understand America Aroused—to dread the weight of our arms and energy.

This is a crucial moment. Nothing can so smother the Hun morale, so blast his hopes as a further message from a hundred million Freemen, a message that says in tones that cannot be misunderstood, "Our lives, our dollars, our ALL—these are in the fight for that Liberty which was made sacred by the sacrifices of our forefathers."

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3. **INTELLIGENT MANAGEMENT**
4. **BEST STRAIN OF BEES**

Supplies: In the matter of equipment for the apiary, our line is complete and carried in stock in many distributing centers. In these days of transportation difficulties, orders must be placed very early to insure delivery at time required. Prices have advanced from time to time and if you put off ordering until spring, you may have to pay more, and suffer serious delay, but now—**You Can Save 10%**. All orders accompanied by cash for bee supplies received prior to December 1st will be entitled to an early order discount of 10% from our August 1st price list. We give this discount because we want to keep running to full capacity during our dull season. By ordering now you are being patriotic for two reasons: First, you are keeping manufacturing operations at full capacity without overtaxing valuable warehouse space; and secondly, you are relieving the traffic congestion and saving yourself the delay which will result in waiting until next spring.

*Don't fool yourself again, but order your
Root supplies NOW.*

THE A. I. ROOT CO.
MEDINA, OHIO

New York
Chicago
Philadelphia

Indianapolis
St. Paul
San Francisco

Los Angeles
Syracuse
Norfolk

WHY???

Why is it that so many beekeepers prefer Dadant's Foundation? Why does it give such good satisfaction, and why is it that when tested side by side with many other makes, beekeepers have reported that they take to DADANT'S first.

Do We Use Special Sheeting Machinery? NO.

We use the Weed process of sheeting our beeswax into endless rolls, and it is the same process employed by all other manufacturers.

Do We Use Special Foundation Mills? NO.

We use the same kind of mills as are used by practically every foundation manufacturer in the world.

Do We Use Special Beeswax? NO.

We use beeswax such as is produced by beekeepers all over United States.

Then WHY??

Because

Our beeswax is cleaned in such a way that all impurities are removed, and all the fine qualities are retained.

Because

Sulphuric and other acids recommended and used by many manufacturers for cleaning beeswax are not used by us.

Because

Our motto is and always has been, "EVERY SHEET PERFECT," and we live up to it.

Because

For FORTY YEARS, our foundation has been and still is OUR SPECIALTY. When you get DADANT'S FOUNDATION you know

that you are getting the best that money can buy. When you send your beeswax to us to be worked into foundation you know that you will get perfect work done. When you ship us old combs and cappings to render you will get the maximum of wax they contain; and, if desired, this wax will be worked into the finest quality of foundation made.

It is Up to You

Therefore, insist on DADANT'S FOUNDATION when you order your goods from your dealer. If you can not get it from him then order of us.

Dadant & Sons, Hamilton, Ills.

OCT 31 1918



Gleanings in Bee Culture



"A Land Flowing with Milk and Honey"

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you spot cash for anything you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.

633 Central Bldg., Sixth and Main Sts.

Los Angeles, California

Telephones: Home 10419; Main 5606

LEUTZINGER & LANE

Wholesale Dealers and Shippers of

EXTRACTED AND COMB HONEY

CORNER DRUMM AND OREGON STREETS
SAN FRANCISCO, CALIFORNIA

WESTERN BEEKEEPERS ATTENTION!!

We pay spot cash for Honey and do not handle on Commission. Write us what you have or expect to have to sell, we buy any quantity. - - -

Beeswax Wanted

In big and small shipments, to keep Buck's Weed-process foundation factory going. We have greatly increased the capacity of our plant for 1918. We are paying higher prices than ever for wax. . We work wax for cash or on shares.

Root's Bee-supplies

Big stock, wholesale and retail. . . Big catalog free.

Carl F. Buck

The Comb-foundation Specialist

Augusta, Kansas

Established 1899

"Griggs Saves You Freight"

TOLEDO

BEE SUPPLIES FOR NEXT SEASON'S USE

Have you placed your order yet for supplies for next season's use? If not, let us caution you to do so as promptly as possible. Owing to the Government regulations on lumber, bee supplies may be hard to get next spring when you want them. Remember the early discounts before December 1, are worth taking advantage of. Send us a list of the goods you will need and we will send you our discounts on the same.

HONEY - HONEY - HONEY

We are always in the market for comb or extracted honey at all times. Let us hear from you as to what you have to offer, mailing a sample of the extracted.

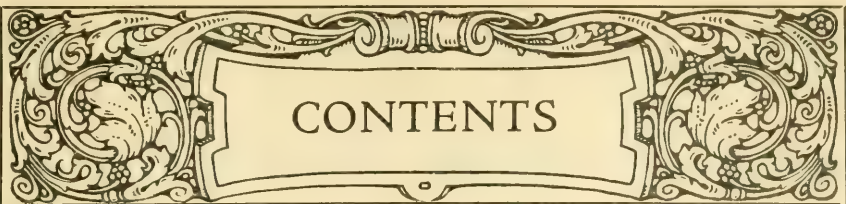
Better exchange your honey for supplies.
BEESWAX either in cash or trade.

S. J. GRIGGS & CO.,

Dept. No. 25

Toledo, Ohio

"Griggs Saves You Freight"



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SUBSCRIPTION RATES.—One year, \$1.00; two years, \$1.75; three years, \$2.50; five years, \$4.00. Canadian subscription, 30 cents additional per year, and foreign subscription, 30 cents additional. **DISCONTINUANCES.**—Subscriptions, not paid in advance, or specifically ordered by the subscriber to be continued, will be stopped on expiration. No subscriber will be run into debt by us for this journal. **CHANGE OF ADDRESS.**—Give your old address as well as the new and write the name to which the journal has heretofore been addressed. **REMITTANCE.**—Should be sent by postoffice money order, bank draft, express money order, or check. **CONTRIBUTIONS** to GLEANINGS columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. **ADVERTISING RATES.**—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. **ADVERTISERS' RELIABILITY.**—The publishers use utmost diligence to establish in advance the reliability of every advertiser using space in this journal. Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly. Space occupied by reading matter in this issue, 74 per cent; advertising, 26 per cent.

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

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A. I. ROOT
Editor Home Dept.

IONA FOWLS
Assistant Editor

H. G. ROWE
Managing Editor

READY MONEY FOR YOUR HONEY!!

SHIP NOW. If you have honey for sale, we want to buy it. Ten thousand producers in all parts of the world witness to the reliability of this house. No purchase too large or too small. We handle many carloads a year. Send us a sample and name your most reasonable price. We buy every time your price justifies.

PROMPT REMITTANCE. Remittance sent by return mail for every shipment we receive.

Honesty and integrity during the many years in the honey business have won for us the good will and confidence of thousands.

OLD COMBS AND CAPPINGS. Send them to us for rendering. We pay you the highest market price for beeswax, and charge you but 5c per pound for the wax rendered. It pays to send us your old combs and cappings.

WANTED, COMB HONEY. Comb and extracted Honey find ready sales here. Tell us what you have. We buy beeswax at high prices. Always glad to reply to inquiries.

WE SELL LEWIS BEEWARE. "Lewis," stands for the highest quality Beeware known. Safe and reliable, "Made like furniture." We are glad to fulfill your needs.

**DADANT'S FAM-
OUS FOUNDATION**

**ROOT'S SMOKERS
AND EXTRACTORS**

SEND FOR OUR 1918 BEE CATALOG

THE FRED W. MUTH CO.

PEARL & WALNUT STS.

CINCINNATI, OHIO

WANTED---50 TONS BEESWAX

The growing demand for

Superior Foundation

Requires increased production

“Best by Test”

Manufactured by

SUPERIOR HONEY CO.

OGDEN, UTAH

HONEY WANTED

We are in the market at all times for unlimited quantities of honey, both comb and extracted. Before selling your crop let us hear from you, quoting your lowest price, either f. o. b. your station or delivered Cincinnati. - If extracted, mail sample, state how it is put up; if comb, state grade and how packed.

C. H. W. WEBER & COMPANY

CINCINNATI, OHIO

HONEY MARKETS

The price of honey, the country over, has advanced somewhat during October, and the price remains at the top, with honey in good demand generally. What price the producer should ask for his honey may best be learned by consulting the quotations below.

The peace talk—and the peace notes passing between Washington and Berlin—during the past month, have raised the question as to the effect on the price of honey should peace be declared. In fact, this has been a very live question among honey-producers, and some of them have directed their inquiries for information to Gleanings. We can only say that at this writing (Oct. 21), one man's guess as to the date of peace-coming is as good as another's. So long as the war lasts, we look to see all food prices remain abnormally high—honey with the rest. When peace is declared, we look to see these prices take a tumble, just as corn and pork prices have done during the last month as a result of nothing more than talk of possible peace. We are not sure, however, even should peace be declared soon and food prices take a tumble, that the price will not rebound to some considerable degree at least, for the whole world is desperately short of food. However, we believe the honey-producer that holds his crop should be calculating the chances of peace and the result on the price of that crop should peace be declared shortly or even six months, or a year, from now. It is certain that the world is coming in sight of peace, and the declaration of peace is going to affect the price of every commodity on the market—some things more and some things less, some things permanently and some things, perhaps, only temporarily.

U. S. Government Market Reports.

HONEY ARRIVALS SINCE LAST REPORT.

Medina, O.—79,470 lbs. from New Jersey; 6,050 lbs. from Pennsylvania; 260 lbs. from Illinois; 280 lbs. from Indiana; 343,000 lbs. from Idaho; 1,600 lbs. from New York.

SHIPPING POINT INFORMATION.

San Francisco, Cal., Oct. 16.—Demand and movement moderate, little change in prices. Cash to producer at country loading points: extracted, per lb., water white, supplies very light, 20-22c; sage white, 22c; light amber, supplies moderate, 20-22c; dark amber, 18-20c. Beeswax: 33-37c per lb.

Los Angeles, Cal., Oct. 14.—Supplies very light. Demand good, little change in prices. Cash to producer on farm: extracted, per lb., light amber and alfalfa 21-21½c; other varieties, too few sales to establish market. Beeswax, 35-36c lb.

UNOFFICIAL SHIPPING POINT INFORMATION.

Caldwell, Idaho, Oct. 15.—190,000 lbs. shipped. Crop still being packed for shipment. Demand good, little change in prices. Carloads, f. o. b. cash, track, extracted per lb. 22½-23c; comb, 24-section cases, fancy, \$5.50-\$6.00; No. 1, \$5.25-\$5.75; No. 2, \$5.00-\$5.50; extracted, per lb., small lots, 23-24c.

TELEGRAPHIC REPORTS FROM IMPORTANT MARKETS.

(The prices quoted in this report, unless otherwise stated, represent the prices at which the "wholesale carlot receivers" sell to the "jobbers.")

Chicago.—No carlot arrivals, no cars on tracks. Supplies very light. Demand and movement active. Little change in prices. Sales to jobbers, Illinois, Wisconsin, and Michigan, extracted, per lb., white No. 1, mostly 25c, amber 22-23c; comb, per lb., No. 1, 33-35c. Beeswax, 35-40c lb.

Denver.—Receipts moderate. Demand and movement brisk. Little change in prices. Sales to jobbers, Colorado, white extracted, per lb., mostly 25c; white comb, 24-section cases, No. 1, \$6.25; No. 2, \$5.75. Beeswax, sales to jobbers 35c per lb.

Cincinnati.—Demand fair, market firm. Sales to jobbers, extracted, per lb., white sage and orange, 28-29c; amber, no sales. Comb, 24-section cases, \$7.00-\$7.25. Beeswax, demand and movement moderate; average yellow, 40-42c per lb.

Philadelphia.—Few sales, mostly to manufacturers. Extracted, per gal., Southern \$2.45-\$2.50; Porto Rico, \$2.50-\$2.55.

New York.—Three cars California arrived, receipts incomplete. Demand and movement moderate. California, extracted, per gal., white, \$3.35; Porto Rico, \$2.25-\$2.40; New York state, Buckwheat, \$2.50-\$2.76; comb, per lb., 29-32c. Beeswax, 100 bags from Cuba arrived; receipts light; incomplete; demand and movement good; market firm. West Indies, per lb. light 44-45c, dark 43-44c, domestic 40-43c.

St. Louis.—Supplies practically exhausted, very few sales. Sales to jobbers—extracted per lb. Southern, barrels, 23-26c, according to color.

Portland.—Two cars Washington arrived. Demand moderate, little change in prices. Sales to jobbers: extracted, per lb., water white, 60-lb. jackets, 27½-28c. Sales direct to retailers—extracted per lb., white, 29c; light amber, 28c. Comb, 24-section cases, \$7.50.

Charles J. Brand,

Chief of Bureau of Markets.

Washington, D. C., Oct. 17.

General Quotations of Wholesalers.

[These firms are asked to quote the wholesale price they make to retailers. Accordingly their prices must be figured at least one profit higher than the price paid the producer. The large dealers do not quote prices in print that they will pay futrely to producers.]

NEW YORK.—We quote from several of the leading honey dealers in New York, date of Oct. 14, as follows:

"The market on honey looks stronger at present especially on domestic demand, and some inquiry for export to Italy. Extracted honey, white, per lb., 27c; light amber, in cans, 26c; in barrels, \$2.45; amber, 25c; in barrels, \$2.35. Clean, average yellow beeswax, per lb., 42c."

"No new export license since May 1. Am paying 23c for white clover extracted; 18c for buckwheat extracted; \$4.50 for buckwheat comb; \$5.80 for white comb. Comb honey, extra fancy, per case, \$5.75; fancy, \$5.50; No. 1, \$5.25; No. 2, \$5.00. Extracted honey, white, per lb., 23c; light amber, in cans, 20c; in barrels, 19c; amber, 18c; in barrels, 17c. Clean average yellow beeswax, per lb., 38c."

"Comb very scarce and selling as fast as arrives. Extracted white is becoming more closely held as farmers' crops are pretty well contracted for or sold locally. Good demand for bottled goods under established brands. Inquiries and orders all over U. S. now. Comb honey, extra fancy, per case, \$10.00, cartoned. Extracted honey, white clover, per lb., 25c to 26c, depending on grade; light amber, in cans, 21c to 23c; in barrels, 19c to 20c; amber, 19c to 20c; in barrels, 18c to 19c; Cuban grades, 20c to 21c."

"Two cars white and light amber offered f. o. b. Nevada, 26½c and 26c respectively; 1 car mixed white and light amber sage, f. o. b. California, 23½c; 1 car white clover, f. o. b. Utah, 24c 1 car light amber alfalfa, f. o. b. California, 23c. Extracted honey, white, in cans, per lb., 27c, Porto Rico; light amber, in cans, 26c; in barrels, \$2.45; amber, 25c; in barrels, \$2.40."

"Market firm and active; demand good. Stocks about sufficient to supply demand. Comb honey, extra fancy, per case, \$8.00; fancy, \$7.50; No. 1, \$6.75; No. 2, \$6.00. Extracted honey, white, per lb., 25c; light amber, in cans, 24c; in barrels, \$2.40; amber, 23c; in barrels, \$2.30. Clean average yellow beeswax, 42c."

"Supplies of Porto Rico honey are normal and the market is firm with a good demand. Pure strained Porto Rico honey in barrels of about 50

gallons each, \$2.45 per gal. Clean, average yellow beeswax, per lb., 45c."

LIVERPOOL.—Since our last report there has been a good demand for honey and prices have advanced. The values are entirely nominal, as far as shippers are concerned, because only very limited quantities of honey are allowed to come to this country, and, if shipping facilities were available, prices would rapidly fall. For good extracted honey, we quote 42 to 44 cts. per lb. The following prices have been obtained for the different qualities: Chilean, No. 1, per lb., 45c; Chilean, No. 2, per lb., 44½c; Chilean, No. 3, per lb., 43½c; Haitian, sold afloat, 42½c; Argentine, sold afloat, per lb., 40c; Cuban, sold afloat, per lb., 42c; Jamaican, sold afloat, per lb., 42c.

We can not report any change in beeswax. The market still remains dull, and for good quality we quote 48c to 50c per lb. The following has been sold: Chilean brings 49 to 51c; Jamaican, 48½ to 51c; Cuban, 43 to 45½; West and East Africa, 41 to 42c. Taylor & Co.

Liverpool, Eng., Sept. 24.

CHICAGO.—Comb honey is quite scarce on the market and is selling readily at from 33c to 35c per lb. for the best grades of white. Ambers bring from 2c to 3c per lb. less, but there is no surplus of either grade on the market at this time. Extracted white is bringing from 24c to 25c per lb.; amber grades from 1c to 2c per lb. less. Beeswax steady at from 35c to 40c per lb.

Chicago, Ill., Oct. 14. R. A. Burnett & Co.

SYRACUSE.—Honey seems to be moving fairly well at present. Along some lines there seems to be a dropping off of demand on account of price, caro syrup taking its place. Comb honey, extra fancy (per case) \$7.68. Extracted honey, white, per lb., 25 to 30c; light amber, in cans, 22-25c.

Syracuse, N. Y., Oct. 14. E. B. Ross.

ST. LOUIS.—Our market is practically bare on both comb and extracted honey. Demand for comb honey very light owing to extreme high prices. Extracted honey in right good demand, would be in ready sales if supplies were available. Following quotations are merely nominal. Comb honey, extra fancy, per case, \$7.00; fancy, \$6.50; No. 1, \$5.50; No. 2, \$5.00. Extracted honey, light amber, in cans, 26c; amber, 25c. Clean, average yellow beeswax, per lb., 40c.

R. Hartmann Produce Co.

St. Louis, Mo., Oct. 14.

PORTLAND.—Very little comb or extracted offered. Producers holding for higher prices. Fairly good demand for extracted. Quality of honey very good this year. Comb honey, extra fancy (per case), \$7.50; fancy, \$7.00; No. 1, \$6.50; No. 2, \$6.00. Extracted honey, white (per lb.), 26c; light amber, in cans, 24c; amber, 20c. No beeswax offered.

Pacific Honey Co.

Portland, Ore., Oct. 12.

KANSAS CITY.—There is a fairly good demand for comb honey on this market, selling from \$6.75 to \$7.25, according to quality. Market fairly well supplied. Extracted honey, white, per lb., 30c; light amber, in cans, 25c. Clean, average yellow beeswax, per lb., 25c.

C. C. Clemons Bee Supply Co.

Kansas City, Mo., Oct. 15.

PHILADELPHIA.—We have at this time no honey on which we can make reports, no consignments, and most producers of comb honey holding at prohibitive prices. Very little demand from retail trade. Our inquiries show bakers not interested in honey at the high prices.

Philadelphia, Pa., Oct. 16. Chas. Munder.

BUFFALO.—Market cleans up daily. Fancy white sold 32c last week; fancy buckwheat, 28c. Extracted, 22c to 23c, best light. Could handle more goods to good advantage. Extracted honey, white (per lb) 22c; light amber, in cans, 21c; amber, 20c. Gleason & Lansing.

Buffalo, N. Y., Oct. 14.

CLEVELAND.—The receipts of comb honey continue light; but the demand is also light and we

think will continue so on account of the extremely high prices now ruling. Comb honey, extra fancy, per case, \$8.75 to \$9.00; fancy, \$8.00 to \$8.50; No. 1, \$7.50 to \$7.75; No. 2, \$6.00 to \$6.50.

Cleveland, O., Oct. 14. C. Chandler's Sons.

TEXAS.—Good rains have fallen thruout south-west Texas, breaking the two years' drouth. Over this section of the State, bees had become very weak for want of natural pollen and honey, later followed up by the ravages of the bee hawk or mosquito hawk thru July and August. In localities the loss of colonies ran above 30 per cent that had to be united or broken up. Farther east thruout the cotton belt, colonies are strong and a few have reported that a fair crop has been secured. Comb honey, none offered. Extracted honey, light amber, in cans, 18c. Clean, average yellow beeswax, per lb., 36c. J. A. Simmons.

Sabinal, Texas., Oct. 11.

TORONTO.—Honey in tins (bulk) is selling to retail trade at 29c and 30c per lb.

Toronto, Ont., Oct. 10.

Eby-Blain, Ltd.

HAMILTON.—Very little first-class clover honey offering. Some amber and buckwheat offering, but we have very little trade for it. We are getting samples to see if it is salable. Comb honey, none. Extracted honey, white (per lb.) 28c.

Hamilton, Ont. F. W. Fearman & Co., Ltd.

CUBA.—Extracted honey, light amber, per gal., in barrels, \$1.90 to \$2.00. Beeswax, clean, average yellow beeswax, per lb., 38-39c.

Matanzas, Oct. 13.

Adolph Marzol.

Classified Advertisements—Received Late

Will pay cash, or give \$100 typewriter for honey extractor.

L. Clark, Winona, Minn.

FOR SALE.—Buckwheat honey in 160-lb. kegs and 60-lb. cans. Seward Van Auker, Delanson, R. D. No. 3, N. Y.

FOR SALE.—50,000 lbs. carload extracted alfalfa-sweet clover honey, subject to best cash offer f. o. b. Delta, Colo. Gale H. Patterson, Delta, Colo.

WANTED.—Second-hand 10-frame Langstroth hives, no disease.

Asa Merriam, Belmont, R. D. No. 1, N. Y.

WANTED.—Sweet or white clover honey. Send sample and price.

Geo. Herrick, 11225 Vernon Ave., Chicago, Ill.

WANTED.—25 or 50 healthy colonies of bees in mild climate with both early and late honey crops.

R. S. Bechtell, Rifle, Colo.

WANTED.—Honey in any amount. Send sample and price. f. o. b. your station.

E. W. Buckley, 12417 St. Clair Ave. Cleveland, O.

WANTED.—Experienced beekeeper and queen-breeder for 1919 season, exempt from army service, who can use tools, as I make my hives. Must not drink or gamble and prefer man who does not use tobacco in any form. State age and salary wanted.

J. W. Potts, Gunnison, Miss.

WANTED.—Four good helpers for our bee and queen yards. Can start now and work the whole year. Can use one settled competent beekeeper. Do not want anyone subject to draft nor any one that is afraid of work. We furnish board. State wages expected. The Penn Co., Penn. Miss.

Liberty Honey Labels

have led all others for more than 9 years.

Samples will show you why. Our catalog is free.

Send for it today—NOW—while you have the address

before you. The war has not affected our prices.

Liberty Co., Sta. D, Box 4009, Cleveland, Ohio

Season 1918 Closed



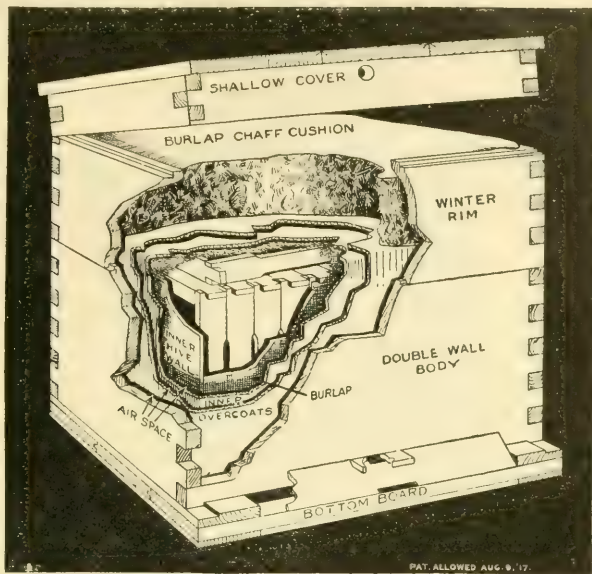
LOOK out for next year by ordering your supplies now and secure 10 per cent early order discount. The high prices now ruling for honey will no doubt continue for 1919 and it behooves the beekeeper to be prepared to secure all the honey it is possible to get. By ordering now the supplies needed will be on hand when wanted. Freight again this year has been slow. In fact some shipments made last summer have not reached some. Express has been better, but even express shipments have had their delay in delivering. Mail orders so far have been delivered pretty promptly. Send in a list of your requirements and we will be glad to quote you or request a Price List with latest prices.



F. A. SALISBURY
1631 WEST GENESEE STREET
SYRACUSE, NEW YORK

WINTER PROBLEM SOLVED

by the Hive with an INNER OVERCOAT



THE INNER OVERCOATS DID IT. During the severe Winter of 1917-18, there was a little apiary of thirty-seven colonies, near Grand Rapids, Mich. Seven of these swarms were in Protection Hives with the Inner Overcoats, all of which came through in perfect condition and without loss. Thirty of the swarms were in hives without the Inner Overcoats and they suffered a loss of some 40 per cent to 50 per cent. This was a severe test as the temperature went as low as 20 degrees below zero, for many weeks. The value of the bees that were lost, had they been saved, would have more than paid for new hives for the entire lot.

Have you ever stopped to think what it would be worth to you to insure your bees against Winter Losses? The life of a Protection Hive will be at least 25 years. Now figure what the cost will be per year, spread over its lifetime. You cannot afford to buy anything else. You need a certain amount of protection from cool weather during Spring and Fall. Get away from the winter packing case nuisance, with all its expense, extra labor, and inconvenience. With Protection Hives you have a neat, compact and efficient equipment.

Protection Hives are made of $\frac{3}{8}$ material in the outer wall and will last a life time, as they are not permanently packed. The packing in a permanently packed hive in a comparatively short time, will absorb moisture, become matted down and not occupy more than two thirds of the space and will rot out the hive and otherwise get in bad order. When preparing Protection Hives for Winter, a piece of burlap is placed over the top of the frames and then two bottomless corrugated paper boxes, Inner Overcoats, are telescoped down over the brood nest, in between the outer and inner hive walls. This provides the burlap with two thicknesses of the corrugated board on the sides and four thicknesses over the top as insulators. They are removed in the Spring and it takes not over two minutes to insulate a hive for Winter or remove it in the Spring by this method. There are many dead air space compartments in this paper and between it.

Send for a special circular showing 10 large illustrations. It has been necessary to advance prices but for the next 60 days, we will sell from one to five sample complete hives in a place at \$5.00 each.

TIN HONEY PACKAGES

2	lb. Friction top cans in cases of 24	5	lb. Friction top pails in crates of 100
2	lb. Friction top cans in crates of 612	5	lb. Friction top pails in crates of 203
2 $\frac{1}{2}$	lb. Friction top cans in cases of 24	10	lb. Friction top pails in cases of 6
2 $\frac{1}{2}$	lb. Friction top cans in crates of 450	10	lb. Friction top pails in crates of 113
5	lb. Friction top pails in cases of 12		

Write for prices on friction top cans and pails and 60-lb. cans, giving quantity wanted.

A. G. WOODMAN CO., Grand Rapids, Mich.

Real Bee Equipment

YOU are one of those careful beekeepers who is already figuring on bee supplies for your next year's use so as to avoid the freight congestion later, and also so as to take advantage of any early discounts.

We are in a position to co-operate with you by making *Prompt Shipment* and at *Prices that will Save You Money*.

More than that, you will want the best that you can get for the money. *Real Equipment*, such as we can send you, will not only save you money, but will be a pleasure to use.

Hives and Supplies

THERE is a big advantage in first-class equipment, something that when put up will stand hauling to your outyards; that will stand the weather when properly painted; in which frames will fit perfectly, and where all hives, supers, etc., are uniform.

If you want to exchange a frame of brood it is a calamity to find that frames will not interchange on account of faulty workmanship. If you want to move a colony, a knot-hole in the bottom-board increases your trouble.

LEWIS HIVES, Supers and Equipment, which we handle, are not built that way. They are "Built Like Furniture," with every piece interchangeable.

Bee Comb Foundation

WE are Comb Foundation Specialists. DADANT'S FOUNDATION is perfected in manufacture to a degree that we feel justified in recommending to you as *the best there is*. In these days of high honey prices, the foundation which is quickest accepted by the bees means considerable honey extra for the beekeeper. Do not lose sight of this point.

Specialties

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Bee Books

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GLEANINGS IN BEE CULTURE

NOVEMBER, 1918

EDITORIAL

TO ATTEND CONVENTIONS costs the average beekeeper anywhere from \$10 to



Wasting Valuable Time at Bee Conventions.

\$25, to cover railroad fare and hotel bills. Most beekeepers will not attend a second time unless they feel that

they can get back enough valuable information to cover the cost of the trip. Therefore it comes about that the hours and minutes of convention time are exceedingly valuable. If the average amount paid to attend a convention is \$10.00 and there are fifty present, the cost per hour will run something like \$60.00, estimating that there are two sessions of four hours each. When, therefore, a few beekeepers will get to haggling on parliamentary technicalities, or when a lot of valuable time is taken up in the election of officers and appointment of committees in which the whole convention unnecessarily takes a hand, many beekeepers become soured and vow they will never go to a convention again.

Every one who attends these meets is entitled to hear discussions bearing on vital topics. Many beekeepers go to learn how to solve a certain problem. Others go because they wish to know the price at which they should sell their honey. When, therefore, some of them see that practically all the time of a session is taken up in the election of its officers and useless parliamentary wrangling, they are disgusted.

But the question may be asked: "How can the matter be expedited?" In the first place, we would not have any constitution to wrangle about. Let the will of the majority at that particular meeting prevail, and that right speedily. In the second place, have a nominating committee appointed by the chair to select officers. Such a committee can pick out the right men better than a whole convention going thru the long and tedious process of a ballot. If the nominating committee is favorable to certain interests, then the convention can accept the report of the committee or else reject it and proceed to elect officers in the usual way. As a general rule the best interests of the convention will be subserved by accepting the report of the nominating committee.

All other routine business should be ar-

ranged by committees appointed by the chair. We would eliminate the address of welcome by the mayor and other town functionaries, and the response. We would confine the program down to the discussion of vital bee and honey questions, so that when the beekeepers go home they can feel that they have obtained something for their money.

There is another part of this convention-going that is valuable, and that is the social time between sessions; for it is then that one beekeeper can approach another and dig out the information he is after. These between-sessions are often more valuable than the regular set-program discussions.

In every program we would have a question-box. There should be a committee to revise and sort out the questions, because there are some questions that should not absorb the time of the whole convention—questions, for example, that can be found answered in any text-book on bees.



THE DAY of the honey adulterator has passed. The modern chemist and the United



Honey Adulterators Caught and Punished.

States food authorities have made it impossible for him to ply his evil trade. As an evidence of the truth of this statement, we quote the following news item printed in one of the leading New York dailies of Oct. 6.

"The Federal Food Board announced yesterday that the license of the Standard Refining Company, No. 217 West Street, has been suspended for four weeks because of the sale of adulterated honey. The company has contributed \$2,919, representing the excess in price, to the Red Cross. The Board says: 'Since about May 1, 1918, the company has sold large quantities of a mixture of honey and corn syrup without informing purchasers that it was adulterated honey. The amount of corn syrup added to the honey ranged from 15 to 26 per cent, whereas the labels on the containers and the invoices described the contents as 'pure honey' or 'honey.'"

This adulterating firm will do no business

from Oct. 12 to Nov. 12, has been made to pay \$2,919 to the Red Cross, and, most severe punishment of all, is branded before the whole country as dishonest.

We can add somewhat to the history of this case, as it was a sale of this Standard Refining Company to the A. I. Root Company that brought about the detection of its rascality. During the summer just past, this firm of adulterators sold to the A. I. Root Company for delivery at Philadelphia approximately \$2,700 worth of amber Cuban honey and bought for pure honey. The A. I. Root Company has a way of analyzing very carefully any honey about which it has any doubt whatever, and so it was that the honey sold to the Root company by the Standard Refining Company was analyzed by Mr. Selser, an expert chemist and manager for the A. I. Root Company at Philadelphia. It was found to be heavily adulterated, and the adulterators did not make denial of its impurity when charged with it and made full restitution to the Root company, who threw the "stuff" back onto the Standard Refining Co.'s hands. A complaint of the adulteration of honey in New York was made by the Editor of Gleanings to the authorities at Washington, and the Bureau of Chemistry of the U. S. Dept. of Agriculture was put on the trail. Where the trail ended is told above.



MAY WE ASK that our readers, who wish to contribute to Gleanings' columns, re-

**Don't Delay—
Write Early.**

member that copy must reach us previously to the 5th of the month preceding that month in which it is desired that an article should appear. That is, had one of our readers wished an article to appear in this November Gleanings, he should have mailed it so as to have reached us at the latest by Oct. 5. In order to reach our readers on time, the type for Gleanings has to be practically all set as early as the 10th or 12th of the month preceding the month of issue. In other words, if you read this November Gleanings and see something in it to which you wish to make reply or on which you wish to comment, don't delay writing it, but write it and send it to us at once—before Nov. 5 at the latest. It can then appear in the next (December) Gleanings. What we are writing is prompted by the fact that on this date (Oct. 16) when the very last type for the last form of Gleanings is being set, a half dozen communications on topics timely for November (and not later) have reached us, but cannot be printed. We very much regret this, but it cannot be helped when writers for Gleanings delay writing as they do. Make this a rule: When you see something in Gleanings about which you wish to write for the next issue of Gleanings, write it at once—don't delay.

IN THIS EDITORIAL I purpose to throw aside the editorial "we," either because it is too indefinite, or not specific enough to cover certain personal experiences that I wish to lay before our readers. In short, I want to take those same readers into my confidence, to tell them a little of the present inside workings of Gleanings.

Open Letter from the Editor.

Gleanings in Bee Culture has been growing, as have also its publishers, The A. I. Root Co. As an executive officer of the latter, my duties have materially increased—so much so that my doctors have said I would have to be relieved or resign my place entirely. Besides the management of the aparies, the selection of copy, its preparation for publication, the writing of the A B C and X Y Z of Bee Culture (a volume of 800 double-column pages), the answering of letters, attending conventions and field meets, and receiving traveling men, I have had the duties of an executive officer of The A. I. Root Co., which has taken no small part of my time. Fortunately, a younger brother, H. H. Root, some years ago came on the scene to help me out. But there came a time recently when he was more needed elsewhere. In looking about for a general manager for The A. I. Root Co., it was decided to give him the job. This action must have left me with very little editorial assistance, had I not already secured the services of an experienced newspaper man and publisher as managing editor, and likewise the services of an experienced and expert beekeeper, Miss Iona Fowls, as assistant editor, who is the daughter of Chalon Fowls of Oberlin, a widely known beekeeper. Much of the improvement that has been made in Gleanings within the last two years should, in all fairness, be credited in no small degree to Miss Fowls and to the managing editor, who is himself an enthusiastic beekeeper.

When it became certain that I should have to have an assistant editor I decided that, first of all, that person should be an experienced beekeeper—one who had been managing bees successfully for years on a commercial scale. In this point, Miss Fowls was more than able to qualify as she has worked with bees from childhood. In addition to her ability as a beekeeper she is a graduate of Oberlin College, taking the degree of A. B.; taught school for a number of years; and at the time I engaged her as assistant she had just finished her post-graduate course, taking the degree of A. M., thus qualifying herself for a college position. While I do not consider a college education to be all that the editor of a beekeepers' journal needs, yet it certainly is a very great advantage; and no one will deny that a trained mind is invaluable in that it will weigh evidence and come to a fairly correct conclusion.

Not only is Miss Fowls' knowledge of

bees deep and thoro, but her enthusiasm for everything connected with the bee business is contagious. She likes her job. She has been on the Gleanings editorial staff for over a year now, and has made more than good from the first. So the time has now arrived when I feel that I should formally introduce her to our readers.

As an evidence of the good work she is doing, allow me to give a little incident. My father, A. I. Root, came into my office one day saying: "I want to congratulate you on the work you are doing in the department of questions and answers. I have gone over your answers very carefully; and I want to say that it is some of the best work you ever did in your life." Turning, I said: "You are not in the habit of throwing bouquets around promiscuously; and in this case I could only wish that I could rightfully claim the honor; but candor compels me to say that it is Miss Fowls, my assistant, who has been preparing these answers, and it is very seldom or never that I have any suggestions or corrections to make." "Well, then," said father, "why don't you, in all fairness, put her name at the head of the department rather than your own?" "For the simple reason that she objects, saying that our readers do not know her, and that they do know me."

I now feel that it is only fair that Miss Fowls' name be put at the head of the department, as you will see it in this issue, and that it be known that she has an important part in all of the editorial work of Gleanings.

In addition to the editorial staff at Medina, Miss Fowls draws on and supplements the experience of her father; and in this connection I take pleasure in saying that Chalon Fowls and his two daughters make up a trio of beekeepers that I consider equal to any in the United States. I have been all over the country; and about the poorest beekeeping locality that I know of is in and around Oberlin, O., their home. The land is flat, wet much of the time, and so dry at other times that it leaves deep cracks. The soil is poor and deficient in lime, so necessary for the growth of clover, their sole dependence for honey. In spite of all this handicap of locality, Mr. Fowls and his two daughters have made beekeeping their sole business, and have succeeded in it unvaryingly, year after year, with the most satisfactory financial results.

When I selected Miss Fowls as my assistant I felt that a beekeeper who could make good in a poor locality, and put herself thru college, would be vastly more helpful to the average run of beekeepers in average localities than one who has lived in a place where the soil, conditions, and climate are ideal for the production of honey. The proof of

this statement will be found in this journal's department of Gleaned by Asking, which is built mainly on the knowledge of the Fowls family. Miss Fowls is adding to this knowledge constantly, for I have put her in personal charge of our beeyards, now aggregating about 800 colonies of bees in nine different yards.

Besides the help of Miss Fowls, I expect more than ever to call on the ripe experience of Mel Pritchard on all questions relating to queens. There is no better authority on queens and queen-rearing and the natural history of bees.

I will be pardoned for the personal reminiscence relating that many years ago Chalon Fowls used to come to my room when I was a student in Oberlin College, and talk bees. These unconventional conventions with Mr. Fowls have always been a source of pleasure and profit to me during the years that have followed. Time and time again I have gone to him to have him help me solve some knotty problem in bee culture, and as often he has been ready with an answer. Enthusiasm—he is full of it. Now, having gotten Miss Iona on our editorial staff I am in position to draw, even more than in the past, on the ripe experiences of the very man who helped to inspire me 36 years ago, a year or two before I became editor of Gleanings.

Now a word about myself—am I going to resign? Not at all. I expect to stay right on the job as editor of Gleanings. I expect to make other people do the work that I have not the time to do. I shall continue to be traveling editor and editor-in-chief as heretofore, to write editorials as before, and to travel among beekeepers, armed with camera and notebook. It is my purpose now to keep on with the series of articles I have begun, telling what the big beekeepers and the little beekeepers have been doing, and just how they do it. The camera will be kept busy clicking and the best of the "clicks" will be reproduced in Gleanings. A knowledge of what such a beekeeper as R. F. Holtermann in Canada or L. S. Griggs in Michigan is doing (two of the most successful beekeepers in the world) is invaluable. It is my purpose to call on such men all over the United States. My plans are now made to make a special trip to the Pacific Coast in the very near future. The columns of Gleanings for the year to come will have illustrated articles telling just how the other fellow does his work. I shall write mainly of those beekeepers who succeed; and it will be my job to discover why and how they succeed, and then tell my readers about it. My aim is to make Gleanings increasingly useful to its readers, and to keep it abreast of the best beekeeping the country over.

E. R. Root.



IONA FOWLS.

IN our October issue I discussed the fundamentals for successful outdoor wintering; but I did not go into minute details any further than would be indicated by the half-tone illustrations on page 594. I have since had some pen drawings made that show every detail of construction of the different methods of packing. These, together with the legends beneath, explain not only the method but the reason.

It should be understood that we are showing at this time only the methods of packing colonies for single-walled hives. The construction of the various double-walled hives that are used both summer and winter is so well known that I need not go into that phase of outdoor wintering. Probably 99 per cent of all colonies of bees are in single-walled hives, either on account of their

BEEES IN SINGLE-WALLED HIVES

How to Pack for Outdoor Wintering. New Ideas as to the Best Shape and Construction of Entrances

By E. R. Root

initial cost or because of their greater mobility and compactness for outyard work. Commercial beekeeping has resolved itself into a series of apiaries sur-

rounding the residence of a beekeeper who may also have an apiary in his own doorway. When a series of outyards are used, aggregating from 300 to 500 or even 1,000 colonies, the first cost of the hive itself is an important factor; hence I have felt that it is important at this time to show several ways of packing outdoors in single-walled hives.

As the legends beneath the engravings give all necessary details it only remains for me to make some general comments.

The plan recommended by the Government experts as shown in Fig. 1 is good except in the matter of expense. If the colonies are strong enough, and have sufficient

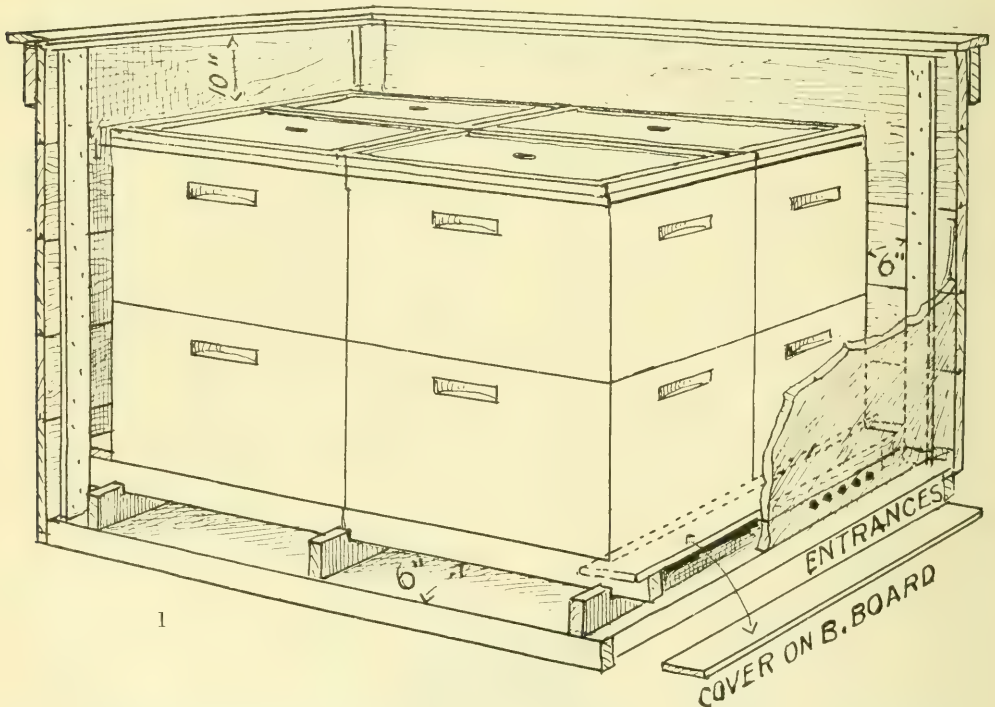
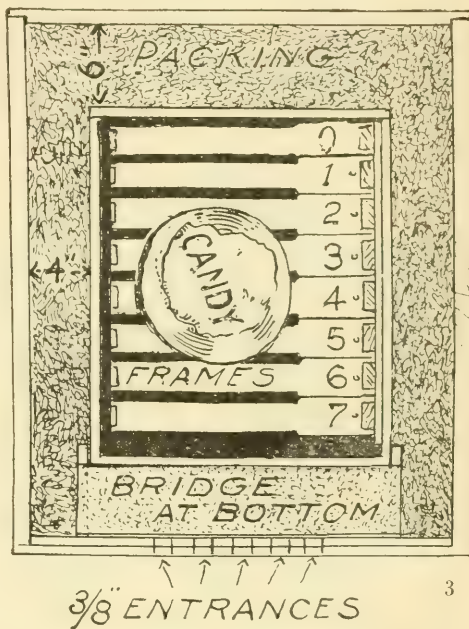
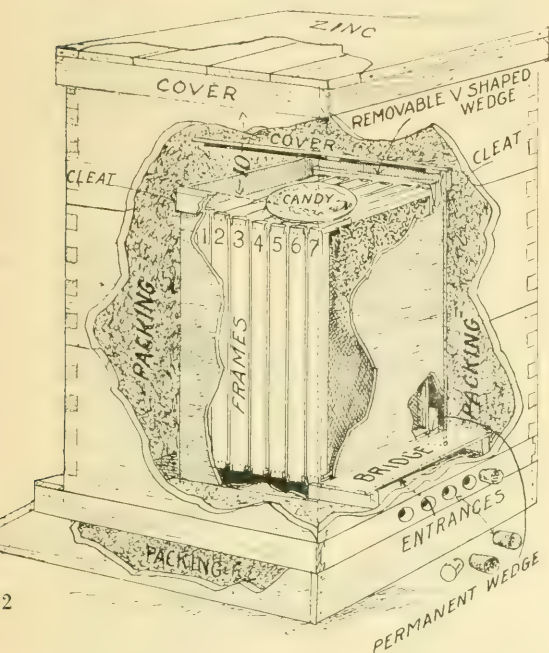


Fig. 1.—This is the plan recommended by Dr. E. F. Phillips and by a good many other beekeepers for wintering bees outdoors in single-walled hives. It contemplates a winter case made up of panels which are held together by means of screws or nails at the corners. This case should provide six inches of packing around the sides and ends, at least four inches under the bottoms of the hives, and at least ten inches on top. Dr. Phillips particularly recommends wintering in two-story hives. First, a double brood-nest makes a relatively deep wintering space. Second, it provides ample room for breeding in the spring. Third, it provides ample stores. Fourth, no attention is needed during spring. Spring management is practically eliminated. Attention is drawn to the five-hole entrance. All the holes except one in the center, according to Dr. Phillips, should be closed during cold weather. As spring approaches, one or more holes are opened up. The only objection to the plan here shown is the expense of the winter case, this amounting to about \$3.00 per case, and the requirement of at least 45 pounds of stores per colony, which, at 20 cents a pound, means \$9.00 worth of honey.

stores, either natural or artificial, the two-story plan of wintering in the big cases is possibly as nearly perfect as anything that has yet been tried; but, unfortunately, many colonies are either hardly up to one-story strength or short of stores, on account of the sugar shortage. For all such the Demuth plan offers its advantages. The initial cost of the inner case is low and the protection good. We had excellent results with it last winter, severe as it was. I am convinced that a winter brood-nest should be relatively deep to get the best results. The Langstroth

the same strength in a Langstroth hive, with the same protection, will winter very poorly. Bees seem to like a tall shaft; for then the cluster can move up and down; and experience last winter with the Demuth case showed that bees in the coldest part of winter would cluster in the top of the inner case. It was so warm up there, and so far from the entrance, that during most of the winter the cluster expanded over the top.

The two-story scheme of wintering as shown in Fig. 1 likewise makes a relatively deep brood-nest, and yet leaves the frames



Figs. 2 and 3.—These two figures represent the Demuth mode of wintering a single-story colony of bees on Langstroth frames. It consists of an inner case large enough to take seven and eight frames—preferably eight—placed on end instead of the way they hang in summer. The outer case consists of two Langstroth hive-bodies and a super, or three hive-bodies. The hive-stand may be packed full of dry leaves and set on a platform a few inches from the ground. The inner case, containing preferably eight frames, is then set down in the center of the two hive-bodies. Dry leaves packed solid, or planer shavings, are then filled in between the inner case and the regular summer hive-bodies surrounding it. A bridge connects the inner case to the outer for the entrance. The entrance consists of five $\frac{3}{8}$ -inch holes, all but one of which may or may not be closed during the coldest part of the winter. It is important that there be no ledge to catch snow and ice under the entrance; so the bottom-boards and hive-stand are turned around to leave an entrance at the rear as shown. A cake of candy, if there is a shortage of stores, is put on top. The cost of this arrangement is only about one-fourth of that shown in Fig. 1, and the amount of stores will be only a little over half as much. The amount of packing to the case in this way between the walls will be $2\frac{3}{4}$ inches on the sides, and 3 inches on the ends. While this is less than recommended in the Government case, the form of the winter chamber is such that less packing is required. The reason for this is given on page 596 October issue, middle of the second column. The objection to this general plan is that it must be unpacked earlier than the hives shown in Fig. 1.

frame, relatively shallow, is ideal as it is now used for late spring, summer, and early fall. It is just right for extracting and for tiering up, but not just right for winter unless it is stood up on end, as shown in the various Demuth plans. As I have pointed out heretofore, bees in box hives and in trees will often winter well when colonies of

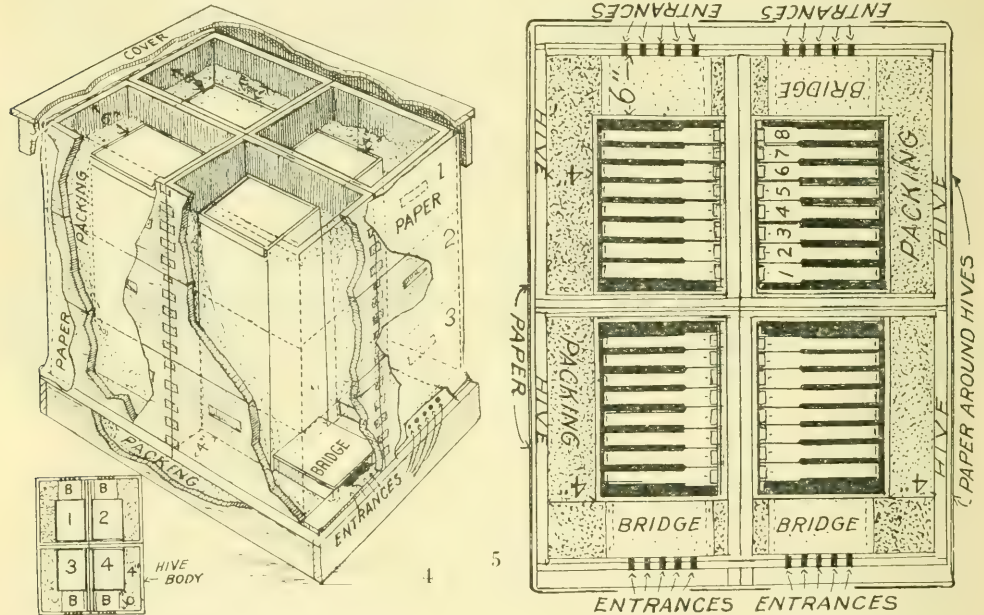
hanging as they do in summer. In theory, at least, the bees will have plenty of room for breeding without further attention, clear up to the time of harvest; and when they are unpacked they are ready for business, if not ready for swarming. Dr. Phillips says this scheme of packing eliminates spring management. For outyard

wintering or long-range beekeeping this one feature alone is invaluable. If it did not take \$9.00 worth of stores and require so expensive a case, it would be all right.

Entrances.

During the last year or so some developments have taken place in regard to the construction of entrances. After examining the colonies that wintered in the Government cases at Washington and at Painesville, O., I became convinced that one, two, three, or more holes would be very much better than a slot. In Fig. 9 we have before us the two styles of entrance-contracting cleats. George S. Demuth of the Bureau of Entomology explained to me that an entrance in the form of a slot 8 inches long and $\frac{3}{8}$ inch deep was not of as good construction as one made up of a series of holes.

ago I did not take very much stock in it, because I believed that a single three-inch hole like this would clog up, because dead bees gathered on the hive-bottom would soon close this entrance. As every one knows, such a closing would mean death to the colony. But Mr. Demuth and Dr. Phillips argued that if there were plenty of bottom packing—six inches or more packing around the sides, ends, and on top, there would be no accumulation of dead bees on the bottom-board. They proved to me that such was actually the case, when I visited the Government apiary last winter and spring. The bees were so warmly housed that when any dead bees fell down on the bottom, the live ones would poke them out of the single hole before they accumulated. The interior of the hive would be warm for the



Figs. 4 and 5 represent a modification of the Demuth plan as spoken of in Figs. 2 and 3. Some may prefer more packing space than is permitted in Fig. 3. More room can be given by putting four three-tier Langstroth hives in close contact on one bottom-board and placing the inner cases in the inner corners contiguous to each other. This leaves more packing for the exposed sides—4 inches on the side and 6 inches on the end. A common cover should cover the whole four hives, and in addition there should be a paper wrapping around the four hives to avoid possible air currents between the hives proper. This mode of packing is ideal where the colonies are placed in groups of four. While we did not use this scheme, we did use that shown in Fig. 3 with the most gratifying results.

It is a very easy matter for cold air to pass in at one side of the slot and warm air get out at the other side. In the new style as shown in Fig. 9, if all the holes are closed except one, and that in the center, during the coldest part of the winter the warm air in the hive can not very well escape to any great extent, and neither can the cold air from without penetrate into the hive. I am frank to confess that when this scheme of entrance was first brought to my attention a year

ago I did not take very much stock in it, because I believed that a single three-inch hole like this would clog up, because dead bees gathered on the hive-bottom would soon close this entrance. As every one knows, such a closing would mean death to the colony.

Mr. Demuth illustrated this plan by saying that if a bottle with a $\frac{3}{8}$ - or $\frac{1}{2}$ -inch opening were filled with smoke, it would be very difficult to get the smoke out of it, for the very obvious reason that it would be next to impossible to blow air in and out both at the same time thru so small an opening. If we could imagine that this

same bottle, however, had a wide slot, by blowing into one side of the slot the smoke would be easily forced out of the other side.

A colony of bees in a hive is a good deal like a living-room with a stove in it. Suppose we should give that living-room an opening, on a level with the floor, on one side, the opening to be in proportion to the size of the regular opening that is used in the hive where bees are being wintered outdoors. If the living-room were 16 x 20, and 9 feet high (the proportions of a beehive), the opening in the bottom, to be of the same proportion as that in the hive, would be somewhere about 8 feet long by 4 or 5 inches deep. On a cold winter day the cold air could easily blow into this room, but there could be no interchange of air unless the cold air went into one side of the opening and the warm air out at the other side. If there were no other openings, that is precisely what it would do. If we were in that room we would have to build a pretty good fire in the stove, if it were a cold day outside, to make the room at all livable, and in order to get warm we would have to get as near the ceiling as possible or close to the stove. In a hive bees go up to the top or generate enough heat to start breeding. Now suppose that, instead of making a long slot in the bottom of the room as first proposed, we make a hole 4 or 5 inches in diameter. It is perfectly obvious that the cold air could not come in at that hole nearly as easily as it could come in thru the slot.

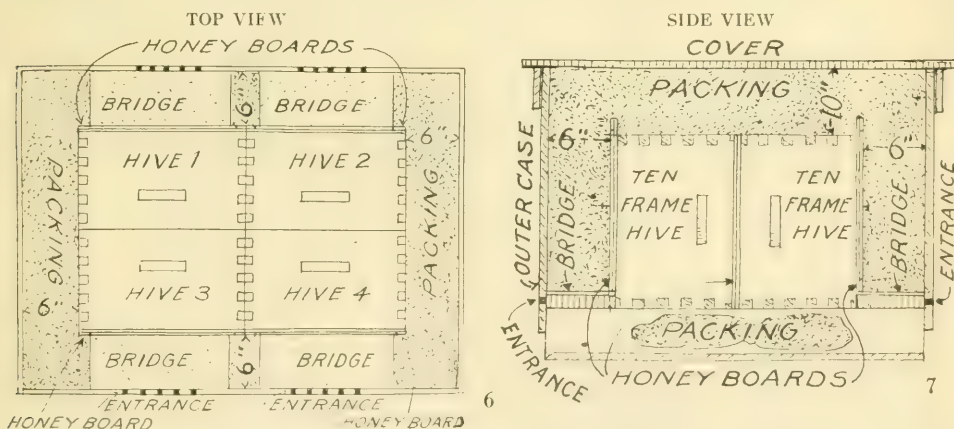
In modern apiculture we have compelled our bees to winter in a relatively shallow room—in many cases with a wide slot clear across the end of that room, and in other cases with the slot narrowed down to a little less than half the width of that room. It is perfectly obvious that the floor of that

room, or the hive, is bound to be cold. The bees are, therefore, compelled to get directly over the opening in the front to get away from the draft. This is exactly what they do in nine cases out of ten.

The plan that Dr. Phillips is urging for a winter bee entrance is a circular opening with a large amount of packing, and then making the room for the bees twice as deep by using two stories. Two things are accomplished: The upper part of that room is warm, and that is where the bees will be mainly during the coldest part of the winter if their stores are there; and, second, the change of air is so gradual that the warmth from the bees is enough to keep the interior so they will not suffer from cold.

The Demuth plan of wintering carries out precisely the same idea on a smaller scale, and it is exactly adaptable to a smaller colony with a lesser amount of stores. In fact, the Demuth inner case is more nearly ideal so far as shape is concerned than the two-story Langstroth hive, which is oblong, and, unless the colony is very large, the bees cannot fill it up.

I am giving the argument as it was given to me by Mr. Demuth, who has used the one-hole entrance for years with the greatest of success. Dr. Phillips recommends it, and proved to me that it works successfully both in Washington and at Painesville, O. This past summer I ran across a number of beekeepers who have been using holes instead of slots for winter entrances. B. F. Kindig, State Apiarist of Michigan, has been using a one-hole entrance for a number of years. He discovered its value accidentally. As a beginner, one fall he made up his mind to put paper wrappings around all his hives, as he saw that plan mentioned in the bee journals. To keep the bees from



Figs. 6, 7, and 8.—These show the scheme of packing where a Langstroth hive, containing 10 frames, is stood on end. • In this case the regular hive constitutes the inner case. It is then necessary to use a specially constructed outer case to surround the four hives. The method of providing the entrance is shown in Fig. 6. This requires that the honey-board on the front be shoved up so as to leave an opening. A honey-board between 1 and 3 and between 3 and 4 should be shown in Fig. 6. This arrangement changes a regular Langstroth hive that is relatively shallow into a deep one for winter. It also makes it possible to use a smaller winter case than the one shown in Fig. 1. Top view looking down is shown in Fig. 6. Side view is shown in Fig. 7. The scheme shown in Figs. 2, 3, 4, and 5 will be cheaper than that shown in 6 and 7.

flying out and stinging him, he tacked a slat over the entrance of all his hives. He then put on the wrapping and tacked it down. The plan was to remove the slats after the bees quieted down in all the hives. This he did as he supposed; but the following spring he discovered that there was one hive he had overlooked, where the slat closing the entrance had not been taken away. That colony, he concluded, would be dead. He examined all the others, supposing them to be alive, but found them all dead. When he examined the one over whose entrance the slat had been nailed, he found it was lively and in fine condition. Ordinarily, closing the entrance kills the colony; but it is probable that the one nail in the slat left a crack, which, while it kept the bees from coming out, did not prevent

scheme has been working well with him every year, altho one year he wintered well with a slot instead of the holes.

R. F. Holtermann, who has wintered his bees so successfully in large quadruple winter cases, similar to those shown in Fig. 1, has been using $\frac{3}{4}$ -inch holes, all of them open. When I explained to him that he might get better results with one hole, he admitted that that might be true, but he had not tried it.

At this time I would hesitate to advise every one to contract entrances down to a single $\frac{3}{8}$ hole during the coldest part of the winter; but I certainly would use three or four holes in place of a slot, and during the very coldest part of the winter contract them down to, say, two holes, and a few colonies down to one hole.

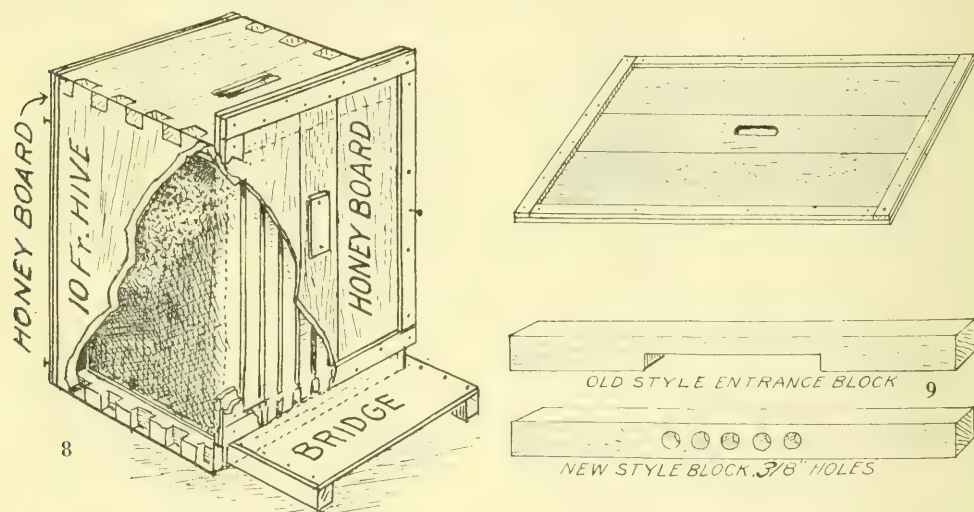


Fig. 9.—This shows the old and new style of entrance-contracting cleats. When either of them is pulled out of the hive it makes a summer entrance $\frac{3}{8}$ inch deep by the width of the hive. The lower one, having the holes, is much better than the upper one, and, according to Dr. E. F. Phillips of the Bureau of Entomology, Washington, D. C., all the holes except the one in the center should be closed during the coldest part of the winter. In late fall or early spring an additional hole or two are opened up. The one-hole entrance makes it impossible for a rapid interchange of air in the hive; and during the very coldest winter, says Dr. Phillips, the bees will be warm enough at any time, provided the hive is well packed, to shove out the dead bees. Unless the hive is well packed, and that means bottom packing, the one-hole entrance would clog up and kill the colony.

the circulation of air. This incident led Mr. Kindig, the following year, to try a limited entrance in the form of a hole, not knowing what the Government experts had been doing. He has been using the one-hole entrance with the best results, but said little or nothing about it because he supposed he was not orthodox and so had been keeping still.

At the field meet held in Michigan I had quite a long talk with J. N. Harris of St. Louis, who has for years been using $\frac{3}{8}$ -inch holes for entrances. To prevent mice from getting in he drove a nail across the hole to exclude the mice but not the bees. The

One thing more: No matter whether the slotted entrance or one consisting of a series of holes is used, it is very important that there be no doorstep or ledge to catch snow and ice. We have tested this out to our satisfaction, and some of the biggest beekeepers are emphatic in the statement that doorsteps just beneath the entrances are far worse than useless.

From a theoretical point of view the scheme of a one-hole entrance and a large amount of packing looks good; but as it has not been tried on a large scale by a large number of beekeepers, I feel that we should proceed carefully.

WHEN TO PUT BEES IN CELLAR

*It is After That Final Cleansing
Flight Taken on One of Those Sum-
mer-Like Days in November*

By Belva M. Demuth

TO the beekeepers who winter their bees in cellars, the month of November brings some anxious moments, for usually one of its 30 days is the right one for putting the bees into the winter repository. I find occasional records in the bee journals of bees having been put into cellars the latter part of October, and quite a number for early December; but, thruout the region in which cellar wintering is practiced, the great majority of bees apparently are put in during this month—November.

Our own experience in cellar wintering is confined to a region considerably south of the imaginary line forming the present southern boundary of cellar wintering in this country; yet, even here, the right day for putting the bees in for best results in wintering usually occurs before Thanksgiving Day. In case of the few exceptions to this, when the expected flight day did not come until the last of November or early in December, there was always room for some doubt as to its being the right day after all, the probability being for those years that the early part of the month, or even late October, had offered a better day. Reports from regions far north of this would indicate that there is less difference in the date for cellaring resulting from latitude than one would expect.

The literature on this subject seems to attach less importance than our own experience would indicate, to a selection of a certain day as preeminently better for this purpose than any other day in the month. We think this is because most beekeepers who winter in the cellar have better winter stores than ours have been. During a number of years our colonies that were wintered in the cellar were put in in two installments, with sometimes an interval of several weeks between times. A part of the colonies in each installment had been given granulated sugar syrup for winter stores, while the remainder were wintered on natural stores. We soon learned that when we failed to select the best day for cellaring, the after effects were much less destructive when the stores were good than when they were poor. Here, as elsewhere, the presence of inferior winter stores so magnifies the results that differences which might otherwise escape attention are easily detected.

Very Early Cellaring Not Desirable.

The colonies are not in condition for their winter confinement until some time after the beginning of the broodless period. It frequently has been noticed that after a week of confinement to their hives by bad weather at the close of brood-rearing, there may be an accumulation of feces and an eagerness for flight, equal to that resulting

from several months of confinement at similar temperatures and with similar food some time later. Evidently, some little time is required for the bees to

change their mode of life from summer activities to the quiescence of autumn; and cleansing flights, after such activities have ceased, are necessary for their comfort and subsequent quiescence. Furthermore, the last of the young bees that emerge at the close of brood-rearing must have a cleansing flight to prevent discomfort and restlessness on their part. It is, therefore, several weeks after brood-rearing ceases before the colony reaches the greatest degree of comfort and repose so noticeable during the mild weather of autumn.

After once having reached this condition, the instinct for repose is so strong that it continues in temperatures that at other times would cause extreme activity. For this reason the flights at this time are meager or partial at best, even on warm days. Under such conditions we cannot expect a definite and thoro cleansing flight, in which all the workers take part, until some time later after a period of bad weather. We usually have this condition during the latter half of October, and sometimes early in November. Since it is highly desirable that all the bees of each colony have a flight not more than a day or two before being put into the cellar, beekeepers usually wait until the bees have been confined to their hives long enough to desire a flight.

Date For Cellaring Determined by Character of Flight.

Fortunately, such a day usually occurs sometime during November—a veritable summer day set in like a jewel among the sombre days of this season. The clusters then unfold completely, and probably every bee except the queen of each colony goes forth into the sunshine before the flight ceases. This is the day that determines when the bees should be put into the cellar. Sometimes there are two or three such days, but one is enough for the bees. If the next day is cool and cloudy, the bees should be put in at once, whether it be the first week or the last week of November.

Carrying the Bees In.

The first cool day after such a flight the bees are so quiet that they can be carried into the cellar with but little disturbance. If the day is cloudy scarcely a bee will fly out of the hives, if they are handled carefully, at temperatures even up to 50 degrees F.; but it is less trouble to carry them in, if the temperature is 10 or 15 degrees lower than this. We prefer that the hives be carried, (not wheeled) into the cellar and piled in separate piles, five hives in each pile. The bottom-boards are left on, and

the lower hive of each pile rests on a box about the size of a brood-chamber. When our colonies are cellared under such conditions, we can be sure we have made no mistake. If another perfect day for a flight should occur later, and we are inclined to wish the bees had been left out, we need only to look at the quiet and contented mass of bees hanging below the bottom-bars of the brood frames, to dispel any doubts.

to find the record from Stray Straws and elsewhere. What a storehouse of information his accumulation of record books must be, and how fortunate for the rest of us that a few careful people take time to record such facts as these! In most cases, the records indicate that the bees had a good flight the day before being carried into the cellar.

During the 24 years for which data are

Year	Date put in	Date last flight	Remarks
1888	Oct. 25	.....	Began taking in
1890	Oct. 28-Nov. 8	.....	.....
1891	Probably Nov. 1	Last week Oct.	.....
1892	Nov. 16	.....	.....
1893	.....	Nov. 10	.....
1894	Nov. 20	.....	After two hard freezes
1895	Nov. 13	.....	.....
1897	Nov. 22	.....	.....
1898	Nov. 24	Nov. 5	Poor wintering followed
1899	Dec. 1 and 2	Nov. 27-28-29-30	.....
1900	Nov. 20	Nov. 19	.....
1901	Nov. 15	.....	.....
1902	Dec. 8	.....	Delay on account of installation of furnace. Poor wintering resulted.
1903	Nov. 28	.....	.....
1904	Nov. 14-19	.....	Flight days after Nov. 19
1905	Nov. 29	.....	.....
1906	Nov. 19	Nov. 9	.....
1907	Nov. 21	Nov. 18-19-20	.....
1909	Nov. 18	.....	.....
1911	Nov. 13	.....	.....
1913	Nov. 8	.....	.....
1914	Nov. 27 (?)	Nov. 24-25-26	.....
1915	Dec. 4	.....	.....
1916	Nov. 20 (?)	Nov. 19	No flight between Nov. 1 and Nov. 19

Table giving the dates of Dr. C. C. Miller's cellaring.

It sometimes happens, perhaps once or twice in a lifetime, that November fails to furnish such a flight day as I have described. When this happens poor wintering is inevitable, unless the beekeeper by some rare instinct was induced to put them in the latter part of October.

In this connection, I have tabulated the dates on which Dr. Miller has cellared his bees since 1888, as far as I have been able

available, the average date for setting in is Nov. 20. They were put in twice in October, three times in December, and 19 times in November. They were put in before Nov. 20 10 times, after Nov. 20 11 times and on Nov. 20 once. Thruout these reports there are many expressions of regret that the bees were not put in earlier, but no indications that he ever regretted putting them in too early.



DR. MILLER, in his department of Stray Straws, in our issue for October, page 602, referring to the skyscraper propped up with rails as shown on the cover of the September number, frankly said he had "never seen anything like that in real life." When he adds that he "suspects" that "such things are so rare that they hardly need be considered," he voiced a very natural opinion. I might have expressed it similarly myself six months ago. Pictures on pages 589 to 593 inclusive show that the skyscraper is by no

SKYSCRAPER BEEKEEPING

*New Conditions and Possibilities
Brought About by the Production
of Extracted Honey*

By E. R. Root

apiaries of skyscrapers—perhaps not so tall thruout as the one shown in the October issue, but showing yields which, on account of good wintering, good locations, good management, and the production of extracted honey, are by no means uncommon. Take the single case of L. S. Griggs of Flint, Mich., pictures of whose apiaries and individual colonies are shown in this issue.

means very rare. The half-tone illustrations in this issue are further proof of this statement. We shall have illustrations from time to time showing whole

From 300 colonies he took over 1,000 supers averaging 45 pounds to the super. This would make an aggregate of 45,000 pounds of honey, or over $3\frac{1}{2}$ supers on the average, not including the brood-nest, for every colony he had in his apiaries. In other words, the average of his colonies was four and a half ten-frame stories high. If they had been eight-frame they would have been nearly six stories high. As there are always some colonies that will fall below the average, it necessarily follows that other colonies will have to go far above the average. Mr. Griggs would, therefore, have a large number of colonies six stories high for ten-frame and eight-story for eight-frame. The

labor. When I asked him how he would lift those heavy supers off from those skyscrapers he said, with a twinkle: "If the bees put it there, I'll find a way to get it down. That's the least of my trouble."

I must confess that I myself was surprised to note the size of some colonies in Michigan, New York, and Canada during the past summer; and the large number that would go into the skyscraper class.

Four conditions make a skyscraper possible and not so uncommon: (1) The production of extracted honey as the result of wartime conditions; (2) good wintering; (3) good management; (4) good location. Mr. Griggs has all four of them. I positively



Fig. 1.—A general view of one of the apiaries of L. S. Griggs, Flint, Mich. If one will take the pains to count, he will see that many of these skyscrapers are six stories high, and some of them $7\frac{1}{2}$. Six 10-frame stories amount to 60-frames capacity, which, translated into eight-frame hives, is the equivalent of $7\frac{1}{2}$ stories, or precisely the same thing that was shown on the cover of *Gleanings for September*, and which our good friend Dr. Miller considered of rare occurrence. Figs. 2 and 3 are the details of another yard belonging to Mr. Griggs. A good location, a good beekeeper, and the production of extracted honey make a skyscraper not an uncommon occurrence.

illustrations from photographs show a number of skyscrapers taken out of the Griggs yards, and they by no means represent his best. Mr. Griggs does not buy a pound of sugar for feeding. He makes his bees fill an extra super of combs with good honey. One of these he gives to every colony he puts in the cellar.

I said to Mr. Griggs, "You must have had abnormally good wintering and a good season." I do not remember his exact words; but the impression conveyed to my mind was that this was nothing out of the ordinary, since he had turned his attention to the production of extracted honey; and he further added that, since changing over, he would be able to take care of 50 to 75 per cent more colonies with the same amount of

know there are some in the same bee territory, or equally good, who do not get anything like such results. If this is the case, our good friend Dr. Miller may claim that the good beekeepers are rare. I do not know about that; for during the past summer it seemed to me they were all good—that is, where they have gone beyond the 100-colony stage. A man who can make a hundred colonies pay can usually handle between 300 and 400, and make a very good living indeed during these war times, providing, of course, he has the locality and strong colonies in the spring to back him up. Dr. Phillips of Washington says the key to success in beekeeping is good wintering, and good wintering means big colonies.

Perhaps my good friend Dr. Miller may

meet me here by the assertion that good colonies are not common. I have my doubts on that point also; but it is fair to say, however, that a good beekeeper in a poor locality will do better, probably, than a poor beekeeper in a good locality. Now, then, when we put the combination of a good man in a good place we get results like those secured by David Running, Leonard S. Griggs, Ira D. Bartlett, R. F. Holtermann, Dr. C. C. Miller (when he has a favorable season), and dozens and dozens more whom I could name, if I did not fear that the mention of those names would call down upon my head censure for letting other people know that they are in a good locality. Even as it is, I may get my ears boxed, metaphorically speaking; but I will venture the assertion that there is not a man who can go into the localities I have mentioned and compete with them, for the reason that they **already know the locality**. Don't forget that, Mr. Prospective Poacher. It would take you a good while to learn to know them as well. You would get left in the race badly if you made the attempt. It goes without saying, that all these men and other good men in good territory should be left in possession of that territory within at least three miles of any one of their yards. But why crowd or overstock a locality? There is some fine territory where there are no bees; and if any of our readers wish to know where it is, if they will write me I will put them next to it. There is no reason under the sun why one beekeeper, in the eastern States at least, should encroach (or poach) on another; and a good man will not do so, even when he consults his own interests.

Now there are several important points that I wish to emphasize, for upon these points hangs the success or failure of beekeeping. First of all, skyscraper beekeeping requires good wintering. Colonies that just squeeze thru, wintering with only about two or three frames of brood and bees, may not amount to very much. Good wintering means strong colonies in the spring. I do not care how good the honey flow is, if the colonies are not large, they will not give good results. Good wintering largely solves the springing problem.

In the production of **comb** honey it is possibly true that colonies abnormally strong at the beginning of the season will not do as well as medium colonies, on account of the fact that a colony too populous may waste its time in trying to swarm before the honey flow is actually under way. Some very good comb-honey producers have given expression to that sentiment; but now that nearly every one is running to the production of extracted honey on account of the war, it is hardly possible to winter too well nor to have colonies too strong; and the lesson is that all the beekeepers in the United States should follow the instructions given in these pages in the September and October issues and in this one also. No man can go into the skyscraper class unless he winters

well. Many won't follow directions because it "costs too much"—penny wise and pound foolish.

The importance of knowing the locality; of being in a good locality in the first place; and last, but not least, being a good beekeeper, is so obvious that I do not need to emphasize it further here. The importance of good wintering—and that, of course, means good springing—has not been emphasized enough; and because this fact was hammered into my head in going over the country last summer I feel it my patriotic duty to my country to hammer and continue

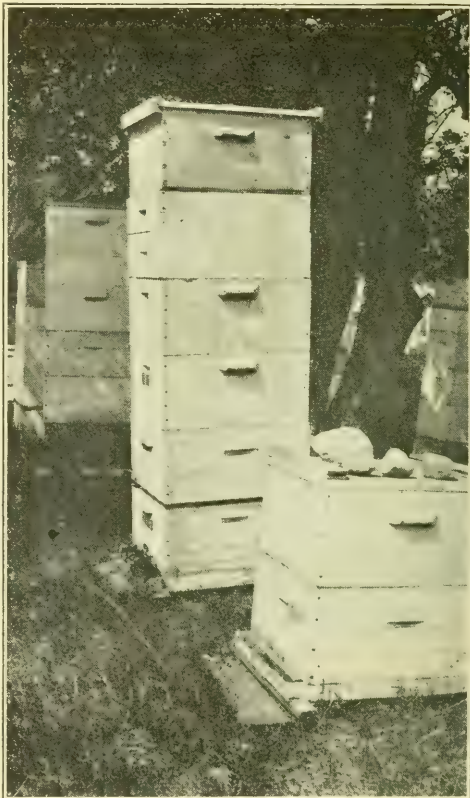


Fig. 2.—Details of one of Mr. Griggs' skyscrapers. There were eight combs to the super, bulged out, of course, in a ten-frame hive-body. In the eight-frame supers it is customary to have six or seven frames to the super. The super shown in the engraving ran about 45 pounds to the super for the entire number of colonies, or an aggregate of 45,000 pounds for 300 colonies.

to hammer on the importance of good wintering thru these columns until next spring.

One thing more: I'll be criticised for making beekeeping appear too rosy. The average man, either because he does not live in a good locality or because he does not have the requisite ability, can not get into the skyscraper class; but the good man in a good locality can and ought to get there.



CONVERSATIONS with DOOLITTLE

A Discussion of What Can be Done to Improve the Stock of Bees

"Probably no other branch of rural industry will show so large a number of improvements connected with it as will beekeeping, but the improvement in stock, with the bees, has not kept up with that in other lines of the animal kingdom. Are the great mass of bees today any better for honey-gathering than in the days of Samson, Virgil, or Aristotle? By improvement I mean not simply purity of breed, or color, or gentleness, but rather the ability and disposition to gather the largest possible amount of honey, and store it in the whitest combs free from dirt or propolis, or the largest amount of well-ripened honey for the extractor, with the power to transmit these qualities with a good degree of certainty to the next generation."

Well, really, you go back so far that I have little authority or knowledge to help me in answering your question. Just how big that swarm was that went into the "strange hive" of Samson, how much he obtained at the end of the harvest, or what disposition he made of the major portion of the product, the Bible does not dwell upon. Neither does it tell us as to the whiteness of the combs, nor how well the honey was ripened; and I find nothing in the Bible account of the honey-extractor. To tell the truth, I am still more ignorant as to the bees of Virgil and Aristotle. But I do know that the black bees of 50 years ago were not to be compared with my Italians of today. And I speak this from the knowledge I have gained in working with both all along down thru the past half century. I am in perfect accord with all those who are striving to improve the bees we now have, and who have done much planning along this line. However, there is a reason why bees cannot be improved as rapidly as can other stock upon the farm. With other farm stock the male can be controlled, but we beekeepers have the control of only the female. When it comes to the control of the male, which is the **major** part in breeding all animals for an improvement, we are almost entirely handicapped, as any effort to control the drones similar to other stock has proved abortive. I am aware that the attention of beekeepers has been more largely taken up with hives, implements, methods of manipulation, and discussions of different races or breeds of bees, supposed to already be nearly perfect, like the Italian bees and queens of a direct importation from Italy; but the one who reads the advertising pages of Gleanings will see that

there are many who believe they are making advancement along the line of improvement of the bees in the United States and Canada. The way is still open for a still greater advancement all along the line, by each beekeeper bringing the average of his bees up to that of his very best colonies. If he finds during the surplus honey harvest two to four of his colonies which give a maximum yield of honey, let him prepare the way for this improvement and advancement, by selecting out for a queen mother the one giving the highest yield, and one equally good, if possible, for a drone mother. By beginning with the drone colony a little before the ending of the main flow of nectar, thru giving a large amount of drone comb for the queen to fill with eggs, and then keeping this colony well supplied with stores, so that all these eggs for drones will be matured and held ready for use as soon as most of the drones are killed off, and having the young queens of mating age when wanted for these drones, quite a share of the mothers of our colonies the next year will show an advancement over that of the previous years. Then, following out these lines for a term of years, we shall notice that there is not so much difference between the yields as there was formerly, and that all will come up well toward what was given by the very best of a decade before. It is hardly to be expected that all the honey secreted by the flowers will ever be gathered, even by the best of bees; nor will the best or most productive bees it is possible for man to produce, ever gather nectar where none is to be had. However, if we breed from the most productive colonies till 50 or 75 will gather what 100 have been gathering during the immediate past, we shall save at least what is required to keep the extra number of colonies. It is estimated that it requires from 65 to 90 pounds of honey to get the average colony thru a year; and where any field is limited as to flora or the nectar yield, with colonies which will give double the amount which was done in the past, this saving will give as much in surplus as was required by the extra number of colonies we formerly had to keep. If in addition to bringing our bees up to perfection along this honey-producing line, we can breed so as to give us such as have the least disposition to swarm, we can gain another point; for, when working for comb honey, if our best bees are much inclined to swarm, and swarms issue during the first half of our surplus nectar yield, our prospects of a good honey crop are materially lessened, as with the prime swarm go the laborers which should do the work in the sections. And if we return the swarm, it generally leads to the contraction of the swarming fever, which, when fully

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carried out by the bees, destroys nearly all prospects of the securing of any fancy honey, and very little of any other kind. If we can find a case with the desire to supersede one of our best thorobred queens, and raise all of the young queens from her, quite a gain can be made in this way; and very nearly the same can be made by rearing our queen-cells above a queen-excluder, as this places the bees very much in the same position and desire as does a case of supersedure. It is well worth while for each apiarist to do what he can along these lines.

G. M. Doolittle.

Borodino, N. Y.

BEEKEEPERS FOR LIFE

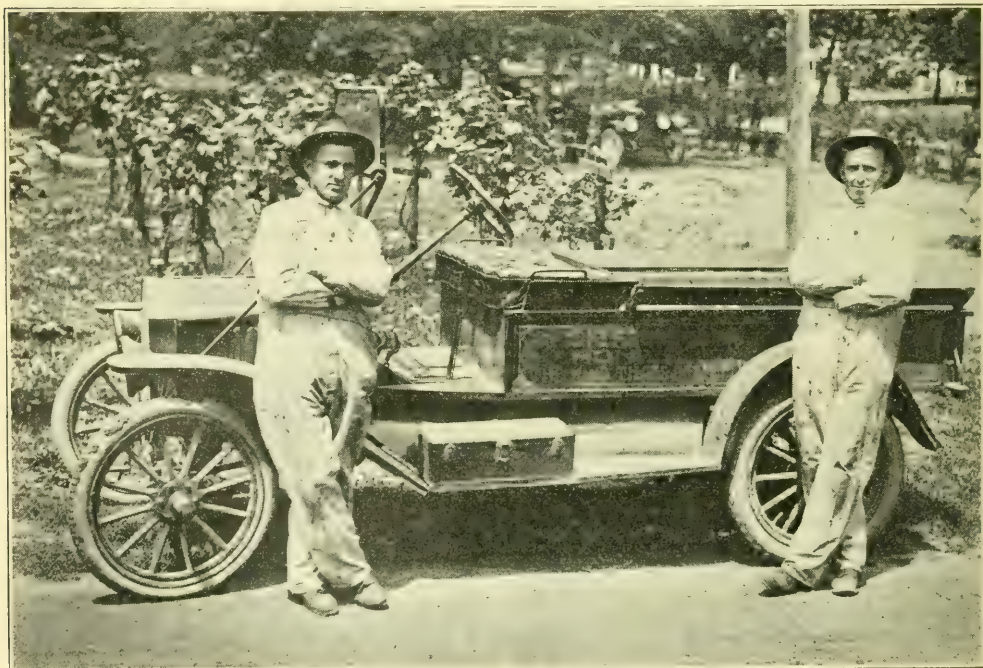
Two Enterprising Youngsters and Some Things They Do and Study

"If we live to be 80 years old, like you, we shall still be beekeepers." So said Will Klabuhn to A. I. Root on June 29, when he and his brother, needing some supplies in a hurry, visited the Home of the Honey Bees. These two, with their father, comprise the firm of Klabuhn & Sons, and with the "pep" and enthusiasm they display, it is not strange that their fancy-comb and extracted-honey apiaries are known for a good many miles. Their home in Conneaut, O.,

away in the extreme northeast corner of the State, is 106 miles from Medina. Starting at three in the morning, they drove 78 miles and surprised their sister in Cleveland for breakfast, then drove on to Medina, stopping on the way to rescue a man and woman and six children imprisoned under an overturned Ford. The young giants took hold of the machine where it lay upside down against a bank, tipped it back onto its wheels, when it was able, altho battered and torn, to limp on its way, with its badly scared crowd, thanks to the two heroes of this tale. Some Ford story! The boys arrived in Medina about 10 o'clock and we held an informal bee convention. "The question box, as usual, was the chief feature of the convention"—and everybody asked and everybody answered.

Their winter loss was only 7 per cent. Young queens that kept up brood-rearing late in the fall were largely responsible for this good record. The boys have no use for old queens simply because they are too likely to quit laying in the latter part of August, so that the colonies go into winter quarters with old, worn-out bees.

Will Klabuhn had just had an interesting experience with an unscrupulous or careless Southern breeder. (Not a Gleanings advertiser.) Just a year ago he ordered a dozen queens from this breeder, and sent the mon-



Will and Walter Klabuhn of Conneaut, O., "snapped" just after their arrival in Medina one June day last summer. Bee-suits are just right for a quick automobile trip.

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ey to pay for them. The money order was cashed, but there was no further acknowledgment. Failing to get an answer to his letter, he wrote the breeder a second time, this letter being registered. The breeder signed for the letter, but forgot to answer it, just as he had forgotten to fill the order for the queens or return the money.

Two or three months elapsed, and by this time our friend was getting a trifle hot under the collar. He walked in to the post-office one day, stated his grievance and was directed to write a full history of the case to the nearest postal inspector, whose address was given. After this, he heard nothing of the affair for some time until one day a letter came from a division inspector, inquiring whether the matter had been adjusted. On replying that it had not, there came another lull of a month or so. Finally, there came a letter from the breeder—a very unexpected sort of an epistle. The Southern man explained that he had been peeved because Mr. Klabuhn had asked for his money back so soon and had decided to make him wait a while. But he wound up by enclosing a postal order for the full amount originally sent, with interest at 8 per cent, beginning July 1—this last by order of the postal authorities. The inspectors may be slow, but they are sure.

The Klabuhn boys in scores of instances have taken queens from colonies diseased with European foul brood, put them in perfectly healthy colonies on combs with no trace of disease, and in four weeks found European foul brood. They say that queens from colonies so diseased, will, if introduced into healthy colonies, be responsible for a reappearance of the disease in 95 per cent of the cases they have tried. This is a point over which there has been considerable controversy. These young men insist that they have tried it so many times that they are sure the queen is responsible.

Of course, it has been known for a long time that Italian bees are more immune than black bees, and that some Italian stock is more immune than other Italian stock. Now, if the contention of the Klabuhn brothers is true, is it a case of transmitted infection by the queen or transmission of a weakness for (or tendency toward) this disease, obtainable from common sources in a locality? In other words, does the queen carry the disease, or is a queen from a diseased colony simply non-resistant to sources of contagion accessible to all colonies? If the latter is true, then a queen from a colony diseased with European foul brood, introduced to a perfectly healthy colony on healthy combs in a locality where this disease had never been known, ought not to result in trouble afterward. Who can give positive proof?

Mr. Klabuhn and his sons, as mentioned

above, are producers of both comb and extracted honey. Admitting the strong tendency toward the production of extracted honey now, they predict that in a couple of years or so, the pendulum will again swing the other way, and soaring prices will once more cause a rush towards the production of comb honey.

Here in Medina we have had some experience in buying out small beekeepers living near by, more especially those who do not take care of their bees and who might therefore allow them to become diseased. Several of these we have bought out twice and even three times, only to find that they have some bees again after a year or so. The Klabuhns have had this same experience. When we asked what they finally did in such cases, they said, "Buy 'em out, bees, hives, tools, and all. Don't let 'em even keep a smoker. If they have a smoker lying around, it will keep reminding them of bees, and first thing you know they will have some more." Perhaps that's the best way, to take everything, even the nest egg.

Of course intelligent beekeepers are always welcome, whether they are beginners or experts; the dont-care kind are unwelcome everywhere whether they are amateurs or old timers.

[Later.]—The question as to whether European foul brood is transmitted to healthy colonies by the introduction of queens from diseased colonies, we decided to test out for ourselves. We accordingly obtained 37 queens from colonies badly diseased. These we introduced to two- and three-frame nuclei, and so certain were we that the disease would not appear that we started this new apiary near Medina. In four weeks' time the nuclei had built up into full colonies, and now after a period of nearly four months we are glad to say that no disease whatever has yet appeared. In the cases cited by the Klabuhn brothers, we wonder if the disease would have appeared, had the apiary been started in an entirely new location, so that there could be no possible source of infection aside from the queens.

Medina, O.

H. H. Root.

A TIMELY TOPIC JUST NOW

Is Membership in a Beekeepers' Association Really Worth While?

The above question has often suggested itself to the writer, as perhaps it has to others. The answer, of course, depends upon the association, whether or not it is "onto its job," and whether or not its officers are men who are anxious that each member receive his due share of the profits and pleasure. That some organization is needful for

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the realization of the best in beekeeping is self evident, for we learn from one another as well as from books and experience, and sometimes more quickly, especially if instruction comes thru watching a skilled demonstrator. There are scores of perplexities which present themselves constantly, no matter how long one has been in the business. Many of these are of a purely local nature, and therefore ought to be considered by the local association for the benefit of its members. Often upon the right kind of information at the proper time depends the success of the year. It is especially in solving local problems and furnishing helpful information when it is needed, that the association ought to be of great benefit.

Let me be more specific. Each beekeeper naturally wishes to receive the best price for his honey, especially if he has a good grade. But, if he lives in the country, how is he going to find out when prices have advanced? His customers will not tell him. Not until he has well nigh sold out his supply does he, perhaps, discover that he ought to have received at least 50 cents more for each dozen jars than he did receive. Had he received a card from the secretary of the association, stating the local price of the best grade of honey, it might have meant to him the price of his membership in that association a dozen times over. It is worth while to belong to an organization that considers your profit as well as your pleasure.

Beekeepers ought also to meet more often and to know each other better. As a rule, they are an intelligent class of people whom it is worth while to know. One great "field meet" is not enough for extensive information and good fellowship. A day is too short in which to consider various subjects which deserve attention. As each season of the year has its special problems a timely meeting should be planned to discuss those problems. Already a helpful meeting should be planned for the fall or early winter, at which meeting each member should report as to his observations and experiences of the beekeeping season just closed, giving any new lessons learned.

Perhaps somebody may say that to do all that ought to be done by an association costs money. Very true; but who would object to an extra charge, if the benefit was commensurate with it? Show a man the value of a thing, and, as a rule, he will not begrudge the spending of a few dollars. If, however, he gets little or no return, his interest soon lags and his fist tightens. In order to make the association of value to its members there must be mutual interest; it must be freely and liberally supported, and, in return, it should give to its members timely and necessary information.

Warren, R. I.

H. W. Watjen.

THE QUADRUPLE CASE DEFENDED

How a Little Modification Makes It Inexpensive and Labor-saving

Some appear to think the quadruple winter case is very unhandy, since there is a great amount of work in packing and unpacking. The way I use the cases, I do not think it unhandy or that it takes as much time as some other methods of packing for outdoor wintering. I use a permanent platform under each four hives made out of 1-in. rough pine fastened together by three pieces 1 in. by 4 in. and resting on three pieces of 2 in. by 3 in. The platform keeps the bottom-boards dry, which is a considerable saving, and incidentally keeps down weeds and grass between the hives where it is hard to cut.

The hives are arranged in a row of fours between two hedges of raspberry bushes, which make a fair windbreak. The entrances face east and west, and the row runs east and west, thus making it possible to work up or down the row without passing in front of any hive.

In all the descriptions of this system that I have seen in Gleanings, I notice that the hives are moved off the platforms, and sometimes moved to a row or changed in some other way.

One of the great advantages of the permanent platform is that the bees are not disturbed and confusion is avoided. Another is that the hives face east and west instead of north and south, thus giving every hive the same advantage and avoiding drifting.

In packing I simply move the hives together, fasten the sides of the case together, and slip the case over the hives. The case telescopes over the platform about an inch. I arrange the covers over the entrances and put in the shavings up to the level of the hives. Then the hives are covered with an old sack, and the covers are put back until ready for final packing. The hive covers are put back upside down, as the hives are close together; but that doesn't matter as the roof of the case will keep them dry. I aim to have this packing done early in September because I find early protection means lots of fall-hatched bees, which spells surplus next year. It also does away with any winter-nest bother, as I find that nine times out of ten the bees have the honey carried over from the two outside frames, which I take out of any hive that is not strong and replace with a division-board. I plan to do this with all hives and put in a chaff division-board which will give two inches more protection.

In feeding I turn up the corners of the quilts (as shown in Fig. 1), and invert a 10-pound pail of syrup. You do not have to put

FROM THE FIELD OF EXPERIENCE

in supers to feed, if you are careful to feed at opposite corners and put a sack around the pail.

After the feeding is done (in October) I put a large quilt over the individual quilts. For this I cut an old sack down the seam, thus doing away with the loss of time and the muss in cleaning out the shavings when you look thru the hives in spring. Over this quilt I dump in about eight or nine inches of packing, and put on the roof. Then it is

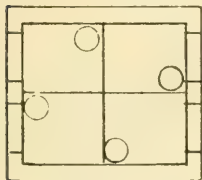


Fig. 1.

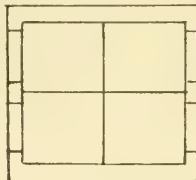


Fig. 2.

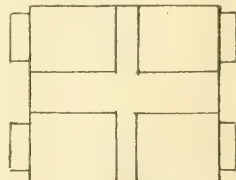


Fig. 3.

all right till next April, when one just wonders if he did put in enough sugar at 10 cents a pound. These winter cases are left on till the last of May or first of June. Of course, after the settled weather comes in the spring, the top shavings are taken off and stored, and the covers put back upside down until the cases are packed away. Leaving the bees packed as long as this would not work as well if they were moved around in unpacking, as by this time the bees have their home spot thoroly localized and their "trade routes" established. The cases are fairly close together, about seven or eight feet between fours; yet each entrance is always within four inches of the same spot, thus saving a lot of confusion. When the cases are first put on or just taken off, the appearance of the hive entrance is greatly changed; yet the confusion is only momentary, as the bees always go to the exact spot regardless of appearances. This is proved by the removal of a hive for a while or turning it around, as the bees will come to where the entrance should be.

As to windbreaks, I think it is quite possible to have too much of a good thing. At our last place I had almost perfect (?) wind protection. The yard was clustered in two rows between two large barns and a dyke on the west side. I found that nearly all my winter losses were in the south row tho it was better protected than the north row. The south row was in the shade of this barn from about October till February and the air was damp and gripping. In this locality the bees were in the open; and last winter, on account of my illness, they had no windbreaks except the two rows of raspberry bushes. They were in the full blast of the wind, and in the full sunlight. There was some air drainage. Of course, the hives placed as they were, served to protect each other. The result of this neglect was mag-

nificent—one hive lost by dysentery, and a small nucleus I was experimenting with, and three queens missing out of 55 hives. Considering the length and severity of last winter and the poor care the bees got, I am satisfied with at least some air drainage. This winter I have a windbreak at both ends of the row. In the spring examination I put the top shavings from the No. 1 case in a barrel. The shavings of the second case go in the first, and so on down the line.

By catching the four corners of the top quilt, after the bulk of the packing is removed, one can gather the remainder quickly, and leave the hives clean and ready for action.

As to the cost of the case, I think five or six dollars cheap, when you consider that the individual chaff hive is the only plan approaching the quadruple system. Compare the price difference of a good chaff hive over the single hive, and I guess I will take the quadruple cases with the neighborhood spirit and warmth.

Chas. Bowden.

Brantford, Ont.



Gleanings has taken great interest in the disease of nosema apis. As you know, the disease has played havoc in our country from top to bottom. I am told that within a radius of ten miles scarcely half a dozen hives survived last winter. In November of that winter I put my two hives under cover so that they were kept dry. In February I was horrified to find hundreds of bees, some dead, and others in different stages of exhaustion crawling out from the hives and dropping on the floor, from whence they could not rise. As it was too cold to disturb the bees much, I put a few drops of carbolic acid into some water and scrubbed the excrement from the alighting-boards. This I repeated on several occasions. Thereafter the bees kept quiet, and I saw nothing more of them until a couple of months later when I found the parent colony well and strong, and the other fairly good. I came to the conclusion that the fumes of the carbolic acid must have penetrated the hives and disinfected the interior.

Walter Taylor.
Formby, Lancaster, England.

INCOMPLETE

sections may be sold to local customers at a reduced price; page 597, and to this may be added that some will do well to extract the honey from such sections, using a special frame to hold the sections.

* * *

Each of the three colonies which stored the most for me this year had a queen which was born in 1916. If I should requeen annually, I feel sure it would be at a loss. It may not, however, be the same with all others.

* * *

M. T. Pritchard mentions on page 615 a thing which is not generally known; namely, that it is quite the common thing for bees to start queen-cells upon the introduction of a queen, these cells disappearing after being sealed.

* * *

The question is raised on page 555 whether bees ever hold eggs for a time and then hatch them. Dzierzon reported that bees did that very thing, and I remember at least one case in my own experience which I could account for in no other way.

* * *

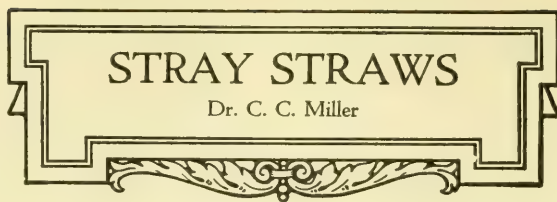
"Breed from the best" is a good slogan, and another that might well go with it is this: "Kill all queens that fall below the average." The trouble with some beekeepers is that while they breed only from the best, so far as they do any special breeding at all, they are inclined to leave to itself any colony having a laying queen, no matter how poor the work done. A poor queen is working against food conservation, and should be treated as a Hun.

* * *

"I think that, if the Lord had intended bees to live in a cellar, he would have made one for them," says J. C. Mosgrove, page 601. The Lord does much of his work thru others. He intended horses should have barns in this region, and he gave man the ability to build the barns. He also gave him ability to make cellars where cellars are needed. Moreover, friend Mosgrove, if, as you say, the Lord gave bees a hollow tree, are you not flying in the face of Providence by using a hive instead of a hollow tree?

* * *

You say, Mr. Editor, page 602, that skyscraping piles of hives that need stepladders are not so rare as I suppose. But are you playing the game entirely fair when you quote such men as David Running to prove your point. Are not David Runnings of rather rare occurrence? Allee samee, you have a chance to know a lot more about it than I do, and I'm ready to modify my



STRAY STRAWS

Dr. C. C. Miller

supposition in accord with your observation. Now please tell us, taking all the colonies in the country, in the hands of all kinds of beekeepers, what

per cent of them should you say have such piles over them as are under consideration? If you say it's more than one in a hundred (I had supposed there wasn't one in 500, but you have somewhat changed my view), I'll climb right down and change my "suppose" some more.

* * *

Glad to see that picture of Mel Pritchard, page 636. I've always had a good opinion of him, and the picture agrees with that opinion. And that reminds me, is there anything in the laws or constitution of Ohio to prevent the readers of a periodical from knowing what its managing editor looks like? [He'll take a chance on your thinking better of him before than after seeing his picture,—and the constitution of Ohio certainly ought to forbid the publishing of any such picture, whatever.—Mng. Editor.]

* * *

Hamlin B. Miller grows wrathful, page 611, when considering vitriolized corn juice devitriolized, and then sold under the claim that it is "as good as honey." Keep your temper, Hamlin; "all things come to him who waits"; and the public is slowly learning that honey is in a class by itself, and for deliciousness and wholesomeness has no substitute. This year, in this locality, the public is more eager for honey than ever before, altho they are paying more than twice the former price for it.

* * *

Mention is made on page 460 of "the fact that the beekeeper can produce a pound of extracted at about half the cost he could produce a pound of comb honey." I wish I knew whether that "fact" is really a fact. We used to talk about a gain of 50 per cent by extracting; now there is more or less talk about twice that much gain. Has there been any advance in the amount extracted, or has there been new light on what has always been done? Anyway, Mr. Editor, can you tell us why the change in the estimate?

* * *

"We believe a queen after having had a honey bath is never quite as good as before." quoth ye editor, page 555. That may be so, but please tell us why. If you should be held under water until an uncomfortable amount of water had got into your lungs, you wouldn't be quite as good as before for a little while, but you would probably be as good as new in a short time. Would it not be the same with a queen if she should in-

spire a lot of honey? Or is there some other harm done? [After being nearly suffocated, how can a queen be as good as before? Any man placed almost at the point of death is seldom as well afterwards.—Editor.]

* * *

The treatment of European foul brood in British Columbia, we are told on page 614, was formerly to "wipe out the colony and hive by fire," and has now been modified, the treatment being in part: "First day—kill queen; * * * 21st day or later—introduce new Italian queen; * * * all combs badly affected with disease should be removed from the hive and burnt." I wonder if our genial friend, F. Dundas Todd, couldn't be induced to do a little more modifying. Eleven days or more might be cut from that "21st day," and I don't believe the treatment would be less effective in one case in a hundred. Just how badly should a comb be affected before being burnt? If a comb slightly affected may be saved, would not exactly the same treatment and the same trouble save the worst affected?

* * *

That case reported by J. B. Douglas, page 555, in which the bees began drawing out full sheets of foundation in the super at the bottom, is interesting. Mr. Douglas asks whether shallow supers might be better, evidently thinking that the height of the super is a factor in the case. It is entirely possible he may be right. The rule is that bees build from the top downward. But I have known exceptions to that rule. By some means I once left a full-depth hive-body over a brood-chamber without filling the hive-body with frames. The bees began building on top of the top bars, working upward. Where the comb rested on the top bars it was an inch or so in thickness, coming to a thin edge at the top, just the reverse of their usual proceeding. I think I hear some one say, "But the bees ought to have known that such combs would be unstable, and that before they reached the top of the super they would tumble over." Well, the bees provided against that, and in a very wise manner. They built the combs in circles, my recollection being that the circles were from 4 to 6 inches in diameter. Such combs might easily be two feet high or more without danger of falling over. Likely, if the super had been shallow enough, the bees would have begun at the top. Also, they would have begun at the top, if a very small piece of drawn comb had been at the top in one of the frames. It may be mentioned in passing that the weaker the colony, the more likely to begin at bottom instead of at top.

* * *

I wish, Mr. Editor, you hadn't settled so far away from Marengo. I'd like a chance for a long talk with you about some of the things discussed on pages 602 and 603. Maybe we could get together. The point of greatest divergence is perhaps the one about

the purity of air in cellar. You agree with me "most emphatically on the importance of having plenty of fresh air when the temperature goes above 50." Below that you don't seem to think it makes so much difference. It seems to me of the greatest importance to have the air pure, even if the mercury should go down to 32 degrees. I confess to a good stock of ignorance on the whole subject; but at least one may ask questions. Is it not true that the more air bees use, the more important it is that that air be pure? If they are entirely dormant, not using any air, can it make any difference whether the air be pure or not? Do they not use air in proportion to their activity? If there is the least activity with 57 degrees in the brood-nest, will they not at that point use the least amount of air, and will that not be the point at which purity of air is of least importance? You say, "When the mercury goes above 60 then it is that the bees require a great deal of air." Well, now, suppose the mercury goes so much below the proper point that the activity of the bees is the same as at 60; will the bees not use just as much air as at 60, and will not the importance of its purity at that point be the same as at 60? Mind you, I'm not dead sure it is so, but just groping around after the truth, and I'll be glad to know what you think about it.

As to temperature of cellar. You say "Better keep the temperature down to 45 if possible." That was the orthodox temperature 40 or 50 years ago, and remained so until Dr. Phillips upset traditions by his experiments. Do you think Dr. Phillips will stand for 45 degrees? I know it is held that the cellar temperature should be lower than the best temperature for the brood-nest, but what reason is there for such belief? Are the bees necessarily obliged to keep up a certain amount of activity, without reference to temperature? If not, does it not seem that the nearer 57 is the temperature of the cellar the easier it is for the bees to keep the brood-nest at that point? Do you really think it easier to keep the brood-nest at 57 in a 45-degree cellar than in a 50-degree cellar? If the bees are utterly inactive, will not the temperature of the brood-nest be automatically that of the surrounding air in the cellar? Or is there a necessary activity, as before mentioned?

You "believe it is rather dangerous to give it out to the general public to shoot up the temperature 'occasionally.'" That's a leaf taken from my own experience of many years with a too-cold cellar; and please note that I advised it only with such a cellar. When the bees became uneasy (I suspect the uneasiness was caused by the bad air as well as by the cold), I warmed the cellar to 60 or so. This only seemed to make the bees much noisier, but that noise soon subsided, and when the cellar fell to its former temperature they were very quiet. The result seemed always good.

ONE of the largest apple-growers in Vermont told me a few years ago that he did not believe bees to be necessary in his orchards. Since then foul brood has destroyed most of the bees near his orchards, and a neighbor told me recently that his apple crops have become very small. I am not surprised. Experience is a dear school, but there are some who will learn in no other way.

* * *

Mrs. Puerden makes a good point when she objects to honey being called a substitute for sugar. Rather should sugar be considered a substitute for honey.

* * *

Chas. A. Johnson's rule for sowing sweet clover on waste land is all right. He says, page 604, "First find limy land, and then ask the owner's permission to sow." Correct.

* * *

Friction-top cans make very cheap and convenient feeders, but rust out quite too soon to be profitable. I am coating new ones on the inside with linseed oil, which will protect them for a long time.

* * *

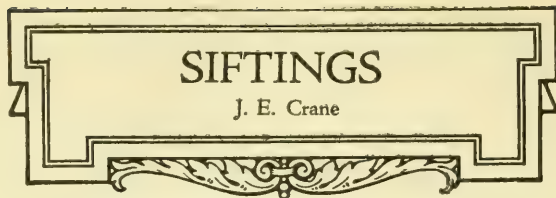
Says E. R. Root, page 590, that if there is anything he "**absolutely knows**," it is that windbreaks are a splendid investment, "an investment that will pay a big dividend year after year," and that "they are not only necessary during winter but also during fall and spring." I wish every young beekeeper in the land could be persuaded of its truthfulness and importance.

* * *

It would be well if those who prepare and furnish tables could study most carefully the table of classified food given on page 605 by Stacey Puerden. It would assist very greatly in giving a well-balanced ration, which is at the bottom of economy in the preparation of food. I have sat at tables where I found cheese, eggs, and meat at the same meal. Again, I have found sugar in various forms out of all proportion to other food, and so on.

* * *

A few evenings ago I received thru a friend a fine section of heather honey from Scotland. It is a beautiful amber, lighter than buckwheat, almost a wine color, with a very strong aroma, and very mild and pleasant to taste. This morning I went to the pantry to get it and found it gone. I inquired of the good wife what had become of it. She informed me that she had car-



ried it to the woodhouse, as it smelled so she could not stand it. It is easy to see why it has become such a favorite on the British Isles. A neighbor in-

forms me that some years ago he ascended one of the Scottish mountains during heather bloom and saw one of the most beautiful sights he had ever seen. The whole landscape was covered with heather bloom, and hill, valley, and mountainside were covered by it. It is not surprising that beekeepers prize it. Yet it may not yield better than those sections where alsike and white clover are abundant.

* * *

People long ago were condemned for not observing the signs of the times, and shall we beekeepers be so interested in our bees that we shall fail to observe the signs of the time in which we live—the most wonderful in the history of the world. King Alcohol is about to be dethroned and forever outlawed in our land. Militarism, another curse of all the ages, is likely soon to be brought under the domain of laws and justice. Little wonder if the earth seems a little greener, the sky a little bluer, and sunsets more beautiful than ever before.

* * *

I am rather surprised that in the quotations of comb honey very little attention appears to be given to the weight of sections. It is fancy and No. 1 and No. 2, apparently without much regard to weight of honey. When we are required to weigh every individual section and pack them in cases, some weighing 12 ounces, some 13, some 14, and some 15, these different weights should receive different prices. Thus a case of 15-ounce honey should sell for quite a little more than a case of 12-ounce honey, as it contains one and one-fourth times as much honey.

* * *

Williams Hugh tells us on page 614, October Gleanings, the more recent treatment for European foul brood: "First day—kill queen; same day, order Italian queen from queen-breeder, to be mailed within 14 days; eighth day—destroy all queen cells; 21st day or later—introduce Italian queen, etc." There are some objections to this plan. Better not kill old queen, unless you are sure of getting a new one or can supply one yourself. One man that I know killed his black queens last year and then ordered others, but these did not get there soon enough to be of much use. I have ordered a good many dozen queens this year which breeders were unable to supply.

A FEW days ago a certain business man on boarding a train in the East noticed two soldiers just ahead of him. One was assisting and steadying the other, and the business man was a little afraid one of Uncle Sam's boys had been drinking something stronger than coffee while he was away from his cantonment on leave. When the soldier stumbled and nearly fell over the slight threshold of the car, the man was convinced that his surmise was right. The two soldiers found a seat and the traveler passed and glanced at them, and to his horror saw that the boy, for he was apparently under 21, had lost both his eyes. His comrade was bringing him home from "over there."

Death is usually alluded to as the "supreme sacrifice," but to me that blinded boy has made the supreme sacrifice. Never again can he see any of the beauty in this wonderful world of ours. The love in the eyes of his mother or sweetheart is but a memory to him. Just when he should be at the threshold of a useful life of great opportunities, he is thrust into a place of utter darkness to learn to live with an almost insurmountable physical handicap.

For years we have been reading of the great numbers of killed and maimed across the water. We have read of institutions where the blinded soldiers are taught useful occupations and we have been asked to contribute to their support. But this blinded soldier was one of our own American boys, and the business man who saw him was my husband. Our casualty lists are steadily growing, and gold stars are beginning to appear in the service flags of every locality. Our colleges are being turned into military schools, and even our 18-year-old boys are proud to be in their country's service.

A few days ago a father of a soldier at the front said to me, "Mrs. Puerden, this war is the greatest trouble that has ever come into the world." That father has since gone to the land where there is no more trouble, his death probably hastened by anxiety for his son in the trenches.

But while it is true that this war is the greatest tragedy of history, all of us can see bits of the silver lining to the great war cloud. The spirit of unselfishness and willingness to sacrifice is growing among all classes. Patriotism is so strong that even the most selfish dare not openly disregard a request of the Food Administration or the Fuel Administrator. Public opinion can be trusted to see that such requests as that for gasless Sundays are as implicitly obeyed as if they were laws. Business men show an

OUR FOOD PAGE

Stancy Puerden



of the Senate. The world is learning that useful work of every sort is honorable, and that the measure of a man's success in life should be gauged by his service to humanity. We are all learning that those people across the water who do not speak our language are not "ignorant foreigners" but brave and wonderful people from whom we can learn much.

And instead of being known as the most extravagant and wasteful nation in the world it looks as if we were in a fair way to become known as a people who practice thrift in all ways without losing our reputation for generosity.

Perhaps the change in public sentiment in regard to thrift is nowhere more apparent than in the kitchen. All of us housekeepers have at times hesitated to speak to the "help," temporary or otherwise, about throwing leftovers into the garbage pail, for fear of gaining a reputation for being close. But now, unless your kitchen helper is densely ignorant, she cannot fail to have absorbed a little of the conservation spirit that is in the air. To illustrate my point I am going to tell you a story that will perhaps shock some fastidious soul. I had given a little dinner for our 18-year-old son, while he was still our boy and not Uncle Sam's, and for the main dish I provided baked chicken. Immediately after the dinner when I went out to the kitchen my Hungarian Lizzie showed me a platter of chicken bones and said, "I saved these, Mrs. Puerden, because there is still quite a bit of meat on them, and I felt sure you would not want them thrown out." Now, altho I always make soup from the bones from which I cut the meat for creamed or scalloped chicken, I had never before saved bones left on the plates. But I did a little swift mental work and made up my mind that Lizzie should not beat me on conservation, and so I said, "That is right, Lizzie. Cooking them over will sterilize them and they will make delicious soup with the addition of a few vegetables." And they did and, furthermore, we ate the soup and enjoyed it. I believe if any of us are inclined to be overfastidious, all we need to do is to read of some of the revolting things the starving people over in eastern Europe have been obliged to do to obtain food.

While I am on the subject of fastidious people, I find so many who think they cannot eat barley flour in any way. They don't like it, they cannot like it, and sometimes I think they are determined they won't like

inclination to forget competition in co-operation to win the war. The saloons must go and equal suffrage for women is sure to come in time, in spite

it. Nearly 2,000 years ago Christ fed 5,000 people with five barley loaves and two fishes, and incidentally taught us our first lesson in food conservation when He directed His disciples to gather up the fragments that nothing be lost.

Honestly now, if you will give barley flour a fair trial I am sure you will learn to like it. I will admit that it is not at its best in yeast bread for the reason that it has not the keeping qualities of white wheat flour. For that reason it is better to buy your wheat flour and substitutes separately and do your own mixing. But barley flour is delicious in cakes, cookies, and drop cakes, especially when combined with honey. It is fitting that these two foods should be combined as they were known and appreciated thousands of years ago, both being mentioned in the first books of the Old Testament. I like to use sour milk and soda with barley flour, as the soda neutralizes the slight acid taste in the barley flour.

Another reason for the use of barley flour in cakes is that as white flour is milled at present, 90 per cent of the wheat berry being used, it is not as soft and will not make as tender a cake as barley flour.

Now that so much is written and taught on foods, we must be careful to mix plenty of common sense as well as wheat substitutes with our baking. For instance, today I noticed a recipe for "Everlasting Gingerbread." After reading over the recipe I decided the gingerbread was correctly named. It was made of cornmeal. Now cornmeal in its proper place is a wholesome and delicious food, but cornmeal in a gingerbread tastes like a respectable Johnnycake gone astray. There is no need of resorting to cornmeal for gingerbread, when delicious, soft ones may be made of barley flour.

Before I leave the subject of flours let me urge you again to avoid the use of cornflour. Personally I feel that bread made of part cornflour might be described as adulterated, as cornflour has not the tissue-building constituents of other flours. I most heartily endorse cornmeal, used in the proper place, but believe cornflour does not deserve the name of flour.

Sweets.

We are told that the proper place for sweets is at the end of a dinner. Perhaps that is why I am apt to get to the subject of honey near the end of my page—force of habit, you see. Have you noticed an article that has recently been going the rounds of the press, telling how to invert sugar to make it sweeter? It is done by heating it with a little water and a very little cream of tartar. If more people would keep bees they might be able to enjoy nature's invert sugar.

Here is a conundrum: Why does the average beekeeping gentleman grow stiff and haughty if you mention corn syrup? They are both good foods, but honey is a sweet and corn syrup is only a

near-sweet, as any cook can testify who has used them both in cooking and baking.

Please try the Honey Devil's Food recipe, made with barley flour, and see if anyone in your family can detect the barley flour in it. It is very good accompanied by the honey ice cream.

The potato rolls are exceptionally good and very easy to make. If you like your rolls sweet, by all means sweeten them with honey.

HONEY DEVIL'S FOOD.

1 cup honey	$\frac{1}{2}$ teaspoon salt
$\frac{1}{4}$ cup shortening	2 teaspoons baking powder
2 squares unsweetened chocolate	$1\frac{3}{4}$ cups sifted barley flour
1 egg	1 teaspoon vanilla
$\frac{1}{2}$ cup thick sour milk	$\frac{3}{4}$ cup chopped nuts
$\frac{3}{4}$ teaspoon soda	

Melt the shortening and blend with the honey, add the chocolate which has been melted over hot water and beat smooth; break in the egg and beat again. Add the sour milk a little at a time alternately with the flour in which the soda, salt, and baking powder have been sifted. Add nuts. Flavor with the vanilla, beat well and bake in a rather slow oven about forty minutes.

CHOCOLATE HONEY ICE CREAM.

3 cups milk	3 eggs
2 squares chocolate	$1\frac{1}{2}$ teaspoons vanilla
$1\frac{1}{2}$ cups honey	1 quart cream
	$\frac{1}{2}$ teaspoon salt

Make a boiled custard of the milk, melted chocolate, honey, eggs, salt, and vanilla, and when cool add the cream and freeze. For a plain ice cream, leave out the chocolate and add one teaspoon more vanilla, or flavor in any way preferred.

HONEY APPLE MARMALADE.

Tart apples	Stick cinnamon, if desired.
Honey	

Cook tart apples until tender and put through a colander. Weigh, and for every pound of apples add half a pound of honey. Cook until about as thick as cake batter, watching and stirring carefully to prevent burning, and put in jars or crocks without sealing. It should be carefully covered. In a few weeks it can be cut out. A little stick cinnamon may be added while cooking if the flavor is liked.

FIG TAPIOCA.

$\frac{1}{3}$ cup granulated tapioca	$\frac{1}{2}$ teaspoon salt
$\frac{1}{2}$ cup cold water	$\frac{1}{2}$ cup honey
2 cups boiling water	$\frac{3}{4}$ cup chopped figs or dates
	$\frac{1}{4}$ cup chopped nuts

Mix the tapioca and salt with the cold water, pour on the boiling water, and cook in a double boiler until transparent. Add the honey and figs and simmer 10 minutes. Add the nuts, chill, and serve.

APPLE PUDDING.

6 or 8 tart apples	$\frac{1}{2}$ cup rice flour
1 cup wheat flour	3 teaspoons baking powder
2 tablespoons shortening	milk
	$\frac{1}{2}$ teaspoon salt

Pare, core, and quarter the apples and put in a pudding dish. Sift the two kinds of

(Continued on page 695.)

WE had such a nice Fair — “we”

meaning the exhibiting - honey producers of Tennessee, main liners, side liners, professionals, amateurs — all there together—the lion right beside the lamb. The whole Agricultural Building won great praise for itself, and, as the admiring throngs sauntered down its goodly length, past fine fruits and fancy vegetables and famous grains, past demonstration booths and the really splendid line of community exhibits, they came at last to the end that was given over, entire, to the Apiary Section. All up against the glassed-in end the Apiary exhibits ranged, the light from the windows softened by white muslin—and it made a goodly sight indeed. The worst thing was the realization that there was practically no honey besides the exhibits! But it was a very nice Fair—on a painfully short crop. Red, white, and blue were the chief decorations, not only of our own section, but of the whole building, and, indeed, practically the entire Fair; yes, and probably of every fair in the country. What other colors could be used in these great times, so thrilling and inspiring and so deeply significant?

* * *

Armed with sugar certificates, we faced the anticipated fall feeding, and lo, there came a flow—a fall flow sufficient for our great need. Even the new little colonies, the 1918 increase, have most of them stored enough for winter, some of them even crowding their queens a bit; while those that may lack somewhat can quite surely be supplied from their more wealthy neighbors. Droughts are surely most distressing and disastrous affairs; yet, sometimes, after having done their worst with the midsummer and the late summer, leaving bees utterly comfortless and beekeepers almost without hope, they dissolve gracefully away into the most desirable of fall rains; and the smartweed comes, and the boneset and goldenrod, and a great profusion of tangled aster. Such was 1918 in middle Tennessee.

Bitterweed also has come; West Nashville is gay with it. The bees we left here under our own vine and fig tree are happily busy on it. I wonder if they really like it. Maybe they don't “like” any honey—merely eat to live. Anyway they are filling story-and-a-half hives. And are welcome to what they're storing. I've sampled it. And I eat for two reasons myself—one is to live, and there's another. The other makes me willing to leave bitterweed honey to the bees.

As to goldenrod, more than one beekeeper in this section has said he never saw bees working it. Mr. Buchanan says that of the two species most common here, one only is

Beekeeping as a Side Line

Grace Allen

worked by the bees. That must be the one growing alongside the Mill Creek Valley Pike, then, the bees have enjoyed it so this fall—ten or a dozen on a clump; more on the goldenrod, in fact, than on the aster right beside it.

* * *

When you moved your first bees, you were very, very, very careful, weren't you? Naturally. And the undertaking was a complete success, wasn't it? Of course. Then you did it again, still carefully, and again and again—always successfully and always with growing ease and confidence. You never became exactly careless—in fact, not at all careless. Just less anxious and fussy. And then—something happened? I thought so. Something often does—at about that point in one's career. Perhaps during the summer extra ventilation was given to one or two hives (one is enough) by the insertion of chips or small pieces of wood; and because the pieces were never very thick anyway, and they had been crushed down still smaller and sort of crumbled away, and the bees had camouflaged the crevices with propolis (which everybody pronounces as he pleases and most of them differently), because of these things and the additional fact of your being experienced instead of fussy, you noticed nothing of the extra space between hive-body and bottom-board. Then probably, when the wagon was about half loaded, the darkey was told to turn that particular hive from crosswise of the wagon to lengthwise. And then it happened. Right thru those exposed cracks. And it kept on happening. And one of you “hollered”—you or your husband or your wife or somebody—just plain “hollered.” And one of you, nimble with hammer and tacks, and very brave, added wire cloth unto wire cloth and all around the edges, and the other added smoke unto smoke and all around the edges. But it had happened. Like spoken words that can not be unsaid, so are bees that escape at night. They can not be returned to their hive. Neither does smoke prevail upon them, nor moral suasion influence them. They are out. The rest is up to you. If you have only one veil, you give it to your darkey. And go on loading. And take your medicine. Then, quite likely, when you start off, part of the loose bees get lost, while the rest quietly ride the outside of several wire cloths. By the time you reach your destination, they are meek, subdued little groups that cause no trouble at all. And you—if you are wise—go home wiser still, realizing that you have fared far better than you deserve.

* * *

We have all read almost interminable advice about what to do when bees swarm,

and what to do when they're storing honey—or when they're not storing at all; what course to pursue when foul brood comes with its ravages or winter with its chill. And we've been greatly benefited by this advice (sometimes followed, sometimes not), and we hope to read reams more. But who has told us what to do when the bees go flashing and humming right thru the heart of a perfect blue-and-gold day in autumn? That's just it—no one has. The subject has been utterly neglected. The Editor has written no editorial on the subject, nor has Dr. Miller given it one Straw or Dr. Phillips one bulletin. Therefore I rise to the emergency; and as there is the Demaree method of this and the Miller method of that and the Alexander method of something else, this shall be known (if you insist!) as the Allen method of beekeeping on a perfect day in autumn.

It is very simple. Open two or three hives—very leisurely. You will scarcely need veil or smoke, using such gentle courtesy. Perhaps you may choose to do this part of the operation with one of those quiet smiles invented by the first man who was content to do simple deeds and think wide thoughts. Or you may prefer a broad smile of conscious appreciation. Or the low slow smooth whistling of a slow old tune. Don't hesitate to use any of these aids, just because they are old. Modern beekeeping has developed no improvements. You will quite surely require something of the sort. The hive-tool alone is not enough.

Now there are two things to do while the hive is open, yea, even three. First, notice how nicely the honey is coming in. Second—and be sure not to hurry this too much—watch the bees. And while watching them, listen to them, feel the content of them, and wonder about them—especially, wonder about them. And about other things too. Third, notice the day itself, the utter, utter beauty of it. Take plenty of time. Look often a long way off—and a long way up. Then very gently close the hive and sit quietly down where you are. And give up—for an hour, or two, or three. Yield yourself absolutely to the spell of the day. And it will yield to you in return things not to be bought or sold or even stolen away, things listed in no market report, because they become at once part and parcel of your very self. As these old deathless moods, given so freely to all God's listening children, come to you, it will feel as tho part of yourself were coming home. Not until later, when you have folded them away in a precious memory, will you give them names. Then you will call them Imagination, Exultation, Content, Wonder, Reverence, Aspiration, Peace.

* * *

Dr. Phillips says that all bee work should be for one of two purposes: to get plenty of bees (of the right age) at the right time for the honey flow, or to keep those bees in the

right condition to gather the crop. "Help-meet" says that they studied out the work to be done and were able to divide it into three classes—work having to do with stores, with room, and with protection. So they could plan with much skill and wisdom. In reading accounts of the systems of management of successful honey-producers, while the reader may be impressed that these systems differ one from the other, he is still more forcibly impressed with the realization that each one has a system, a real, definite system, and follows it. Side liners are only too apt, even when they do good work, to do it in a haphazard way. Good management and efficiency require a regular schedule, elastic, of course, and subject to variations of seasonable conditions, but a clean-cut schedule, with definite objects in view and sound reasons for its every step—not one unnecessary step taken, not one important one omitted.

Let us set about to raise the standard of our own work, each one of us—not critical of others and complacent with ourselves, but rather critical of ourselves and helpful, if may be, to others.

* * *

LATE SEPTEMBER.

The glow of that September day
Was so berimmed with color round—
So Orientally it lay
Along the sky and leaves and ground,
Each weed and wild thing seemed inwove
Across the riotous design
Of some old weaver, who had throve
Forever upon wizard wine.
And all the spell of ancient things
He wove around that dreaming day—
The spell of song and bloom and wings
That drifted their enchanted way.

The boneset raised her magic tents
Of living whiteness on the green.
Where asters in gay tournaments
Were massed and tangled in between;
The Spanish needle sheathed her lances
In her satin's glossy fold,
And mingled in the merry dances
Mad as ever minstrel told;
The ironweed waved her purple high.
But tho most flauntingly she trod,
The wizard weaver passed her by
And laid a crown on goldenrod.

And in that spell I laid me down
Upon the strangely gleaming grass,
And let earth's beauty slowly drown
The little moods that rise and pass.
I laid me down beside my bees,
And all the charm of sun and flowers
Became a voice like far-off seas,
Or murmurous music; and the hours
Grew green and still and full of balm—
And something shimmered o'er the field
As, white and tall and very calm,
The soul of beauty stood revealed.



FROM NORTH, EAST, WEST AND SOUTH



In Northern California— In our October correspondence I intimated that early rains might set in at any time and cautioned beekeepers not to extract too closely this fall. As a matter of fact, there were intermittent rains thruout September, and our fall flow has been very considerably decreased. Jackass clover, alkali weed, and bluecurls were in excellent shape and it appeared that they would yield their normal surplus. Many beekeepers, especially in view of the fact that alfalfa had yielded so poorly, moved their bees so as to take advantage of the above-mentioned bloom. The continual rains, however, cut short the flow and the surplus realized was but half what was expected. The fall bloom yielded best in Kings, Tulare, Fresno, and Merced Counties. Jackass clover has lived up to its reputation as a honey plant, and yielded heavily until the rains came. The honeydew along the rivers in central California is practically a total failure. Reports indicate that there has been but one-tenth of a normal flow from this source. It has been several years now since this aphid honey, often termed "bug - juice," "black - strap," "black-jack," and "wild rose," has produced a full crop. It is regrettable that so little of this honey has been produced, since the demand for this grade by bakers and confectioners has been out of all proportion to the supply. The honey crop for northern California is perhaps only 60 per cent of an average crop. In the northern section of our district the yield has been poor. The ravages of disease had every bit as much to do with the short crop from Sacramento north as had the poor flow.

Honey prices continue firm and the movement of the product is commensurate with market demands. During the past few weeks the California Honey Producers' Co-operative Exchange has sold, net to them, several thousand cases of honey at prices ranging from 22 cents per pound for amber to 24¾ cents per pound for white. The Exchange has still many carloads of honey which undoubtedly will be disposed of within the next month or two according to market demands. The bee-supply needs of more than 700 members of the Exchange are now being handled by the supply department and all members who have not already sent in their requirements, or who do not fill out the requisitions now being sent them, will not receive the full benefits of the reduced prices now available to the Exchange. Prices of practically all bee-supply materials are continually advancing, and it would be poor policy on the part of the beekeepers to unnecessarily delay in sending in their requirements. The Exchange has committees working on the standardization of bee supplies and honey, and also on bee-disease

legislation. These three important matters which concern our industry so vitally will be taken up in a most thoro-going manner. The Exchange realizes fully the importance of this work and is making every endeavor to put forth the proper standards for bee supplies and for the grading of honey.

The bee-disease situation is lamentable, and there is not a beekeeper in California today that will not welcome a change in our present law, which is neither checking nor helping us to eradicate our brood diseases. The Exchange will have a representative present at Sacramento when our legislature convenes this winter. The representative will be in a position to set forth concisely the needs of our industry relative to State protection.

M. C. Richter.

Modesto, Calif.

* * *

In Southern California— Honey prices are firm and the demand is strong. In fact, so little honey is offered for sale in these sections that wherever a few cases are reported, several buyers are immediately out after it. Twenty-one and a half cents per pound or more is offered for light amber, and for strictly white orange or sage honey as high as 24 cents. Only a few producers are anxious to sell at these prices. The high price of honey has made the demand for bees very active, and many persons having little or no knowledge of the business are buying. Late honey plants have not been in prime condition, and, consequently, the bees have not filled up as well for winter as they usually do. Many colonies are very short of stores and will have to be fed in order to get them in proper condition for winter. This is especially the case where the apiary has been run for extracted honey. Brood-rearing has kept up well in most cases, and with sufficient feed the colonies should go into winter with plenty of young bees. Contrary to the opinion of many beekeepers, I believe that plenty of young bees in the fall is a great asset for strong colonies in the spring. This is the case in sunny southern California as well as in colder parts of the country.

With over 100,000 colonies signed up with the State Beekeepers' Exchange, the advantages to be obtained by co-operative buying can easily be seen. In the selling of our products, it is reasonable to suppose that we will be able to sell our honey for as much as the commission men can sell it. If we as an organization can handle the crop out of which dozens of brokers have been making money, we feel that we can save some money for the producer and at the same time get the honey to the consumer just as cheap as he gets it now. Of course, there are some who will not join the Exchange. There never was a movement for the bene-



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fit of any class of producers but that some one was ready to criticise and knock the efforts of those who were working for the success of the enterprise. Some will stay out, thinking that they may possibly get a little more for their honey on account of the united efforts of those who are in the organization, making it harder for the independent buyers to get small lots of honey. California has been the leader in co-operative marketing and has a man as State Market Commissioner second to none in the country. Under his wise leadership, numerous groups of producers have been united by the exchange method, with very great benefit to the members. The beekeepers will likewise be benefited by their exchange.

A few beemen report good yields of honey from the lima bean fields. Others get no surplus at all. This variety of beans is grown along the coast, as we say in southern California, that is, within a few miles of the ocean. There they get the benefit of the heavy fogs that often roll in, night after night, so thick that it gives the country the appearance of having had a light rain. Roofs, trees, and vegetation are often dripping wet for hours. The honey from the lima bean is very thin, and some old-time producers leave it on the hives until winter or even until the next spring. Early extracting has often resulted in sour honey, and experienced buyers are very slow about purchasing bean honey, altho it is of a beautiful white color and has quite a mild flavor.

Considerable rain has fallen over the State during the past two weeks, some sections getting a downpour almost in the nature of a cloudburst, while others got almost none at all. Altho it is too late to make any difference in this season's honey crop, all rain from now on will help toward a crop for the season of 1919. From my experience of about 23 years in southern California, I am convinced that the best assurance of a good honey crop from our dry sage-covered hills and valleys is an abundance of rainfall before the Christmas holidays. As the days grow shorter and the nights grow longer, the moisture seems to penetrate deeper and deeper into the soil. Evaporation is not so great as during the spring when the sun is hot and days are longer and all vegetation is growing luxuriantly. If the roots get well soaked in the fall, it is a double assurance of a crop if followed by copious spring rains.

Corona, Calif.

L. L. Andrews.

* * *

In Iowa—The honey crop in Iowa was about as complete a failure as it could be. A little fall honey, stored after Sept. 1, was all I secured. A number of beekeepers are already looking around for new locations. The secretary of the Iowa association is being importuned to cite good

locations for honey crops. The present locations have furnished crops in the past, and unless forage conditions have changed we cannot see why the old locations might not return to their old-time productiveness.

Well-filled sections of honey are retailing all over Iowa at not less than 35 cents per section (not pound), and extracted put up in pint Mason jars at from 50 to 60 cents per jar. Hold steady now and don't get excited. The beekeeper is beginning to come into his own. These prices need not recede very much for a long time to come. It is actually much easier to sell a 35-cent section of honey now than it was to sell a 20-cent one. It is as Mr. John Egenes of Renwick, Iowa, wrote me, "I find it is not what you will take for your honey. It is what you ask for it."

Every beekeeper in Iowa will be neglecting his duty this year if he fails to attend the annual meeting of the Iowa Beekeepers' Association Nov. 6 and 7, at Des Moines. Nearly every other line of business, including the farmers, hog-breeders, cattle-breeders, fruit-growers, etc., have their association meetings and short courses. Why not the honey-producers get together as a business proposition? If you never have attended one of the annual meetings of the Iowa beekeepers, do so this time. It will surely prove a real tonic for you in your bee work, if not a thoro cleanup of your beekeeping system. Apiculture in Iowa is making steady progress. Many who have always been careless with their bee work are now standardizing their equipment, even tho they do not possess more than a few colonies. The person who keeps two or three colonies in first-class condition and gets full results is just as good an apiarist as the one who keeps more bees and takes no better care of them. If you do not respect the rights of others enough to keep your bees in a healthy and prosperous condition, you are fast becoming a real menace to every other apiarist and should at once quit the business, whether you possess one or one hundred colonies. Our State laws do not allow diseased horses, cattle, hogs, or sheep, to be kept on any man's place. Then why should a slothful, don't-care beekeeper have any more privileges than is accorded the other fellow, and thus be permitted to become a nuisance to his neighbors? If this hits you, "cut it out," for the Iowa Beekeepers' Association is going after and intends to take the last line of trenches of this bee-disease business. If you don't want to fight in the open, you had better make an unconditional surrender.

State Apiarist F. Eric Millen a few days ago said our State association program for Nov. 6 and 7 is going to be most excellent and instructive. "This year more than ever before, all beekeepers are urged to attend, regardless of whether you are a mem-



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ber or not." The program will be strong and practical. Among those who are expected to address the sessions are Morley Pettit, of Ontario; L. C. Dadant and Frank C. Pellett of Hamilton, Ill.; E. R. Root, editor of *Gleanings*, Medina, O.; Dr. E. F. Phillips of Washington; also prominent beemen of Iowa, including a good representation from the Ames Agricultural College Experiment station; Hamlin Miller.

Marshalltown, Ia.

* * *

In Minnesota—At the request of the sugar representative of the Federal Food Administration for Minnesota a conference was held at his office on Sept. 25 to further consider the matter of supplying sugar for the fall feeding of bees. The representative desires to aid the beekeepers in every possible way, and he is anxious that no bees perish for the lack of food. However, in line with the Government's policy of conservation it would seem better not to allow more sugar for the fall feeding than is actually necessary to carry the colony safely thru the winter. More can be secured in the spring if necessary. In making application the beekeeper now states the total number of colonies in his apiary and the number which need to be fed. In most cases these are O. K.'d either by the person in charge of the Bee Culture Division of the State University or by the State Inspector. Not more than 15 pounds are allowed for each colony needing stores. An additional 10 pounds may be secured in the spring if needed. In order to avoid all confusion for the coming year, it was suggested and approved by the conference that it would be a good thing if some plan could be worked out so that a special application form could be provided somewhat along the line of the one used by the Ontario beekeepers in their applications to the Canada Food Board. The form is too long for insertion here, but it is sufficient to state that after the application has been filled out there can be little doubt as to the actual needs of the applicant.

The annual meeting of the Minnesota Beekeepers' Association will be held during the first week in December in connection with the annual meeting of the State Horticultural Society. The Association has increased in membership during the last few years, but there ought to be several times as many members. This organization has been a great help to the industry in the State, and every beekeeper ought to give it his hearty support. Program of the annual meeting and other information concerning the Association can be secured from the secretary, L. V. France, University Farm, St. Paul. The small sum of one dollar makes you a member of the State Association, of your County Association, and of the State

Horticultural Society. Besides, for this same dollar you receive monthly the *Minnesota Horticulturist* and a bound copy of the magazine at the end of the year. Also in addition to the above, you are entitled to plant premiums from the Horticultural Society, which alone are worth the dollar. Mr. Beekeeper, you can't afford to stay out. Come in and help boost.

Minneapolis, Minn. Chas. D. Blaker.

* * *

In Michigan—Bees are going into winter quarters in the best of condition. Brood-rearing has continued later than in years past and this insures a very large number of young bees. Good stores for winter have been provided either in the form of honey or sugar syrup. To date permits for the purchase of about 85,000 pounds of sugar have been issued. The bulk of this sugar has gone to beekeepers in the districts where honeydew was stored in quantities and to the parts of the State where the severe drought and unfavorable weather prevented the storing of the usual amount of fall honey. Unprecedented interest in packing cases and in cellar wintering is being manifested in all counties in the central and southern part of the State. It is evident that beekeepers are making special efforts this year to avoid the loss and disappointments of last winter. The serious loss of last year was a hard lesson, but the moral of it has been well learned. The outlook for next year is excellent.

Excepting such honey as is being held for home trade, the Michigan honey crop in general has passed from the hands of the producers. The prices realized have been very satisfactory. As a result of the prosperous condition of the industry, bees are in considerable demand at this time, and this demand will continue up to the honey flow next season. Beekeepers who are planning on purchasing combless packages should at once get in touch with the producers and, as soon as possible, get orders accepted for spring delivery. The demand for combless packages for Michigan will be tremendous, and those who wait may not obtain bees in time to be profitable next year.

One very encouraging thing noted this fall is the zeal of the better producers for buying the unproductive bees of their communities. Practically all of the better beekeepers are planning on increasing their number of colonies considerably before the next honey flow.

The annual meeting of the State Beekeepers' Association, which will be held at Lansing on Nov. 19-21, promises to be one of the best of good times and one of the most profitable meetings of Michigan beekeepers in recent years. The present indications are that all the previous records of



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attendance will be broken. Practically all the county associations will send delegations of considerable numbers. This will be one of the rare opportunities to talk with some of the most successful men in the industry and to learn many of their methods which make them so successful. The discussions appearing on the program will center around the subjects of the proper size of hives for best results, the use of combless packages, modern methods of marketing, with special reference to the possibilities of a producers' co-operative organization, and the honey-producing possibilities of the Upper Peninsula. The most of the program will be in the hands of Michigan men. E. R. Root of Gleanings and C. P. Dadant of the American Bee Journal have consented to be present and give Michigan beekeepers the benefit of their broad and very valuable experience. A banquet will be held on the evening of Nov. 20. Plan to side-track everything else and join with your fellow producers in a most enjoyable and profitable time. If you have not received a program write to the undersigned.

East Lansing, Mich. B. F. Kindig.

* * *

In Ontario—Following a very fine warm

August which gave a nice surplus from buckwheat, we in Ontario have had a September unusually cold and wet. With a large number of surplus combs to look after, it has been my practice to leave combs on hives till about Sept. 7, as after that date combs are safe from any damage by moths. I delayed starting to take off buckwheat honey this year till that date, and thereby hangs a tale. Weather turned cold and wet, and in three weeks I had but five days in which I could extract honey, and some of those days were only half days so far as bee work was concerned. The result is that at this date (Oct. 7) I still have about 4,000 pounds of buckwheat on hives, and nearly that much more is piled up in supers in a kitchen at home, having been drawn eight miles from an outyard. While it was too cold to extract the honey, yet as the yard was well sheltered I was able to get honey from bees. This season the man who operates from a central base, using escapes to clear supers, and who draws all honey home for extracting, scores without a doubt. However, even if I did get caught this year by unusual weather conditions, have no idea that I would prefer the plan of always drawing the honey home to extract. "Many men of many minds"—that is the only way to explain the different preferences, or shall we call them prejudices in some cases?

I think it was the late J. B. Hall, well known as one of Ontario's best beekeepers, who often said that the most prolific queens and the most populous colonies did not nec-

essarily mean the greatest honey-producers. While I think that in the great majority of cases the largest colonies do store the most honey, yet, without a doubt, there are exceptions. While clipping last spring at one of the yards where the bees are all in 10-frame L. hives, I came across one of the most populous colonies for the time of the year that I have ever seen. Altho it was only about the middle of May, the hive was boiling over with bees, and every comb about full of brood. In fact nine of the combs were literally solid with-brood, and there was not more than a pound or so of honey in the hive. As the hive had been marked H last fall, that meant that it was very heavy with stores and its present condition signified that the bees had used these stores in early brood-rearing. This yard was affected with European foul brood, but the colony in question showed not a cell all thru the season. Naturally I expected great things from such a good showing in spring; but, while the colony stored a lot of honey, yet many others not nearly so populous have stored a great deal more. At present, the colony is extremely populous, and the condition, so far as brood-nest is concerned, shows that the queen has occupied about all of the 10-frame brood-nest thruout the season. Buckwheat supers were taken off on Oct. 4, and on examining the brood-nest I found that there was not a pound of honey in the hive, only a few unsealed cells being in each outside comb, and quite a lot of brood present at this late date. With 70 colonies in the yard, 40 are marked heavy enough for-winter, and the remainder need but from 10 to 15 pounds more stores each, while this single colony has not a pound. Evidently this is a case where too much of the colony's energy is given up to brood-rearing, and the bees, altho in great numbers all the time, for some reason are not as good honey-gatherers as many others in colonies not so prolific.

Bad weather, as already intimated, has delayed bee work very much. While in many cases not much feeding is necessary, yet what is to be done has been held back very much by the cool weather. Even strong colonies would not leave the cluster to take feed from a Miller feeder, and the pails had to be used instead. After all is said and done, is there any feeder just quite so handy and ready for any time as the inverted honey pail with perforated lids. While the wet weather has been bad for bee work, clover, on the other hand, has done magnificently, and fields are now in great shape to go into winter, as so much moisture has made a great growth. Mention was made, in a late issue of Gleanings, of the big yield of alsike this season and good prices prevailing. Since that was written, alsike prices have made a great advance, and I am informed that a



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farmer near us received the record price of \$17.00 a bushel a few days ago. Naturally this means that wherever a field of alsike has been sown, it will be left for seed if the stand is at all good.

Some two months or more ago, I announced in this Department that a successor to Mr. Pettit as Provisional Apiarist had about been chosen. Prof. Gates of Amherst, Mass., was the man I had in mind, but my informant had asked me not to mention the matter as things had not been definitely arranged. As already announced, Prof. Gates has taken up the reins of office at Guelph, and personally I wish to take this opportunity of welcoming him among us. While we have met Mr. Gates only once, yet at various times we have had correspondence, and I feel sure that he will be given a hearty welcome by Canadian beekeepers. No doubt Prof. Gates will attend our coming convention and will have an opportunity of meeting and getting acquainted with many of the fraternity from Ontario and other parts of Canada. That his stay with us may be long and his labors successful is the wish of all of us who are interested in the business of beekeeping.

Markham, Ont.

J. L. Byer.

* * *

In Texas—During the last month conditions over the State have improved very materially. Rains in many localities have greatly changed prospects, and if early frosts do not occur the bees will be in good shape for the winter. Generally the bees now are in better condition than they were a year ago at this time. In the Rio Grande Valley a light summer flow has resulted in the hives now being full of bees with plenty of winter stores. In the Gulf Coast section the bees now are 75 per cent better than last year at this time. In the southwestern territory the poorest conditions prevail of any place in the State, but very recent rains will improve conditions here wonderfully. Bees responded very readily and brood was being raised in great quantity wherever rains had brought out any bloom. A late frost will allow great improvement in this territory. In west Texas the bees are in better shape now than a year ago, but the drouth has not been broken as it has in the other sections. In east Texas the bees are in better condition for the winter; the colonies are stronger and with more stores. In central Texas the conditions vary greatly with localities. In the southern portion the drouth still prevails and bees are not in as good condition as last year. In a few favored localities there is an improvement over last year. Thruout the northern part of the State the bees are now in better condition than a year ago. Of course, the condition of the bees is

entirely dependent upon the plant conditions. In the Valley there was a good flow and the plants were recovering from the drouth. In the Gulf Coast section the recent heavy rains caused some of the spring flora to bloom and bees built up rapidly, even draining comb from foundation on Oct. 1. Bees will go into the winter with good stores and plenty of young bees. In the southmost sections the fall bloom has caused so much brood-rearing that considerable increase is being made. In west Texas those bees that have been allowed their stores will go into the winter in good condition. In the eastern section the fall flow was good and ample stores for winter were assured. In the central section some bees were not able to store any from a fall flow and so will start the winter short on stores. In the north section the bees will go into the winter with sufficient stores.

I often wonder after another year of adverse conditions what proportion of bees exist as compared with a year ago. In the valley section there is a slight increase, the losses having already been made good by dividing. In the coast section there are now only 60 per cent as many bees as last year and only 50 per cent as many as two years ago at this time. In the southwest section there are now only 50 per cent as many bees as there were two years ago. The loss this summer was about one-fourth of the total. The shortage is not much in the western section, perhaps 10 per cent due to general carelessness. In some localities of the eastern section there are now not over 60 per cent the bees that there were last year. In other localities there has been no loss. In the central section the loss during the past summer has not been over 5 per cent, but the number of colonies now as compared to two years ago is about 70 per cent. Thruout the northern section there has been almost no loss.

Feeding bees was such a common practice last year that many beekeepers expected to feed again this year. The general rains resulting in good fall flows over most of the State has changed these feeding expectations. There will be some feeding in the southwest section. In some localities feeding has been done for some time and will cease now. In some localities in the central section there will be some feeding.

The increase that is being made in some localities has disclosed a shortage of queens at this time of the year. Practically no queens are available in this State.

The pound-package trade for this State for next year is very uncertain. One owner has sold his entire supply in three large orders. Many who have had bees to sell in the past will need all they can supply for increase at home. Having lost faith with the old transportation facilities, it will be



FROM NORTH, EAST, WEST AND SOUTH



some time before the shippers attempt the new methods of mail shipments.

College Station, Tex. F. B. Paddock.

In Florida—The question of using sugar for winter stores in place of honey is definitely settled by Dr. Phillips in the circular letter to the Honey Crop Reporters, sent from the Bureau of Entomology on Sept 12. As some of the Florida beemen who were considering extracting their fall crops may not have received this letter, the following quotation will apply to them: "It should be pointed out that any beekeeper who removes his honey to sell at a high price, and then asks the Food Administration to furnish him with sugar at a lower price for his bees, is taking advantage of the war conditions for his own gain, and this is profiteering. * * In no case should a beekeeper ask for sugar for feeding the bees unless he actually must have it. The conditions under which sugar-feeding seems legitimate are when there has been a failure of the honey crop. * * * There has been no failure of the Florida honey crop this year, and there is no excuse for sugar-feeding. A few beginners—and there is an unprecedented number of them this year—will undoubtedly strip their bees too closely and have to resort to feeding, and it seems the duty of the specialist to warn them all in time, and, if they do not take the warning, to insist that they feed honey and not sugar. Also there are a great many who have started with late swarms and with bees from trees, and these must

have sugar to carry them thru. The Food Administration has supplied me with application blanks, which I shall be glad to forward to those who need them.

During a year's correspondence with beekeepers in different parts of the State, the ignorance of practically all of them as to the sources of nectar has constantly been demonstrated. A few of the most important honey plants are well known; but there are scores of others that do not possess even local names. It is humiliating to confess that beekeepers know so little about the plant life on which they depend for their living, and I wonder if Gleanings can not, with the co-operation of the beekeepers of the State, do something to enable us to identify our honey flora. I would suggest that during 1919 the beemen secure photographs of the various honey plants in their immediate localities, giving local names, time of blooming, and other data. These could then be classified and properly named by some competent botanist and published in book form. The price of such a book would, of course, be high; but we are used to high prices in Florida, and most of us would be glad of the opportunity to secure the information. [Gleanings certainly is ready to co-operate in every way possible. Call on us.—Editor.]

One other need is a bee book for beginners, written with especial reference to conditions in the South. There is none such at present and the time may now have come when such a book might pay the publisher. Apopka, Fla. Harry Hewitt.



Harry Hewitt, who writes for Florida beekeepers in Gleanings—and is a most excellent beekeeper.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Three Reasons for Cellar Wintering.

In the long experience I have had, 68 years, and having bees every year, I hardly know where to start with the story you ask. However, I will say at the present time it seems that the most of bee-keepers are wondering how they can winter their bees most successfully. I have for several years wintered in my cellar, the past winter putting my bees in on Nov. 2, 1910

quickly and was ready to go out. So I took eight frames of brood from her and made four nuclei and gave a super, and in a short time I saw they were ready to go again. Then I took four more frames of brood and gave two supers. They were soon full of clover honey and were building queen-cells again. I took four more frames and gave two more supers. I have now taken off five supers and have 140 sections, 137 being salable. Is this good or not? She is only a dollar queen.

Chatham, N. Y.

P. L. Callender.



D. W. Trescott calls this the model apiary.

colonies, taking them out Apr. 20 and 22. My loss was two colonies that were queenless.

My cellar has a cement bottom and is dry. However, there is a cistern in the cellar. It is perfectly dark, windows covered outside and inside, the temperature from 40 to 55, with upward ventilation. The hives are placed on their bottom-boards, entrances all open, covers all off with burlap over the hives, and I set them six inches from the cellar bottom, putting three and four colonies high. I see that my bees have plenty of stores, and find that nearly one-third less honey will winter them. In August I make sure that all colonies have laying queens and have young bees to winter. I watch carefully the condition of the season. At times I have put them in earlier than last year and have taken them out as soon as settled weather. I have wintered all ways imaginable and find the safest and most profitable in cellar wintering. This is because: (1) they use less stores; (2) the hives are kept dry, and not being subjected to wet and dry conditions last many years longer; (3) there is no loss of bees on warm days by flights.

Conesus, N. Y.

D. W. Trescott.

A Queen's Big Record.

On page 556 of your September issue Mr. A. S. Schreckengost of Kittanning, Pa., says he has a golden queen that he values at \$50 for giving him 144 sections. Now, if his queen is worth \$50, what is this one worth? We lost most of our bees last winter, but this queen came thru in fine condition and built up very

Winters Successfully in an Easy Way.

In the September number of Gleanings I told of wintering 84 colonies outdoors last winter without the loss of a single colony, and also of wintering 117 colonies in the winter of 1916-17 without loss. The Editor of Gleanings has asked me to tell more at length as to how I prepare my colonies for winter.

In reply to this letter of inquiry as to my method of wintering outdoors, I will say that I winter in eight- and ten-frame hives, L. frame, set facing south and set a little up from the ground. I have boxes to give six-inch space all around the sides as well as front; some without bottoms, some with bottoms. I place the hive in the box, or slip the box down over hive that has no bottom, and give an entrance of $\frac{1}{2}$ by 3 inches. I pack well with clover chaff or forest leaves flush up to the top of the hive. I then put on a honey-board, with cleat side down; lay



C. O. Yost, of the State Entomologist Office of Indiana, says this field of white sweet clover, Jefferson County, Ind., upon a high bluff above the Ohio river, is the best he has ever seen. Mr. Yost, 6 ft. 1 in. tall, is shown holding his hat above the clover growth—which shows its remarkable height. An apiary is near by.

HEADS OF GRAIN FROM DIFFERENT FIELDS



An apiary of L. L. Andrews (Gleanings correspondent from southern California), located a half mile from the orange groves at Corona, Calif. There were 200 colonies at the beginning of the orange flow. At the close of this flow, the apiary had increased to 300 colonies and had produced 80 pounds of orange honey per colony. This apiary is moved from one locality to another to secure various honey flows.

a strip $\frac{3}{8}$ by $\frac{7}{8}$ across the center of the little bee-escape slot out flush to the outside of the hive; or do the same with burlap sack with just as good results. Then I fill large sacks to completely fill the box with dry forest leaves; or, just as good, use clover chaff. I cover so as to keep out snow or rain, and with plenty of stores I seldom lose a single colony.

Yes, we usually have plenty of snow throughout the coldest winter. Sometimes the hives

are completely snowed under. Then I shovel down to the top of the box to give air so as not to gather dampness. I sell hundreds of swarms in the spring. I never find any combs moldy wintered in this way. I never use windbreaks, but my apiary is located in an orchard. However, I would advise windbreaks in some localities not protected by woods.

A. H. Guernsey.

Ionia, Mich.

Successful Wintering Easily Accomplished.

While this is only my third year in the bee business, I wintered all of my 15 colonies last winter successfully when almost all the bees of my neighbors died, due to the exceedingly severe winter. I therefore think I have the correct wintering scheme. In fact, I have never lost a colony so far, altho I don't want to brag. I winter outside. My wintering plan is according to A B C and X Y Z of Bee Culture. First of all, I have young queens to make strong colonies in the fall. I give plenty of stores, and winter in Buckeye double-walled hives, with leaves on three sides and on top, all covered with tar paper. In this shape they stand long periods of confinement.

The results simply show the difference in having protection, and using double-walled hives.

Harry E. Germond.

Rhinebeck, N. Y.



THE BACKLOT BUZZER.

Ma says that's jes like ye, tryin' to make a strategic retreat under a smoke screen, when I ought to have used poisoned gas.

OWING to the prevalence of Spanish influenza, the convention of the Western New York Honey Producers' Association to have been held Nov. 1 and 2, at Genesee Hotel, Buffalo, N. Y., has been indefinitely postponed, and notices to that effect were sent out on Oct. 14. The convention will be held later when health conditions permit. Howard M. Myers of Ransomville, N. Y., is secretary of this much-alive organization.

* * *

The Chicago-Northwestern Beekeepers' Association will hold its annual convention at the Great Northern Hotel, Chicago, on Dec. 10 and 11. Write John C. Bull, Valparaiso, Ind., for program.

* * *

The annual meeting of the Michigan State Beekeepers' Association is scheduled for Nov. 19 to 21 at Lansing, Mich. It is expected that the attendance will be the largest in years, and the interest shown will be of the liveliest kind.

* * *

The annual meeting of the Lenawee County Beekeepers' Association will be held at the apiary of A. E. Mosher, near the Industrial Home, Adrian, Mich., on Thursday, Nov. 14, at 1 o'clock. B. F. Kindig, State Inspector, will be present.

* * *

The St. Clair County Beekeepers' Association was recently organized at a meeting held at Port Huron, Mich. The new organization starts with a membership of 30 beekeepers. Very great enthusiasm and interest are shown in the new organization.

* * *

The Illinois State Beekeepers' annual meeting, which was to have been held at Springfield on Nov. 8 and 9, has been indefinitely postponed on account of the influenza epidemic. Mrs. Jas. Stone, the wife of the secretary of the State Association, was one of the victims of the epidemic, her death occurring Oct. 17.

* * *

The Los Angeles Times of date of Sept. 29, quoted the resolutions adopted by the Southern California Beekeepers' Association as follows: "That it is the sense of this meeting that we express ourselves satisfied with the present management and plan of work of the Southern California Beekeepers' Association and thoroely oppose any consolidation or union with the State Co-operative Honey Producers' Exchange, and that we affirm we are not now or ever have been affiliated in any way with the exchange."

* * *

The annual convention of the Wisconsin State Beekeepers' Association will be held

JUST NEWS

Editors

at Madison, State Capitol, in the Senate Chamber, on Dec. 5 and 6, 1918. Wisconsin beekeepers who are not members of the State Association

or of a local association not affiliated with the State Association, will not receive programs except on request made to the secretary. Edward Hassinger, Jr., R. F. D. No. 4, Hortonville, Wis., is secretary of the State Association.

* * *

The Division of Extension in Agriculture, University of California, in co-operation with the Extension Service, United States Department of Agriculture, will this year inaugurate a series of short courses in apiculture. These will be given as follows: At San Diego, Nov. 25 to Nov. 30; at Davis, Dec. 2 to Dec. 7; at Visalia, Dec. 9 to Dec. 14; at Riverside, Dec. 16 to Dec. 21. The purpose of these short courses is to afford experienced beekeepers an opportunity to become acquainted with the most successful methods in practice among their fellow craftsmen, and to offer to those of limited experience and the student contemplating beekeeping as a business a series of intensive training. Among the instructors at these short courses will be: Dr. E. F. Phillips and George S. Demuth, of the Apicultural Division, U. S. Bureau of Entomology, Washington, D. C.; Geo. A. Coleman, Apiculturist of the University of California; M. H. Mendelson, one of California's most experienced and most successful beekeepers; E. R. Root, editor of *Gleanings in Bee Culture*; F. C. Pellett, assistant editor of the *American Bee Journal*. This corps of instructors will be assisted in each course by one or more practical beekeepers, who will give demonstrations of methods which they have found practical under their local conditions. Practical demonstrations will be given of the handling of bees and the diagnosis of diseases. There will also be visits to apiaries. A short time will be set aside each day for the discussion of problems of general interest in which all members of the class are invited to take part. Mr. Coleman, who will be in charge of these courses, will have office hours each day. Any one desiring special information or having special problems should see him. He will also be glad to arrange with students for a conference with any instructor. Samples of all the apparatus and tools necessary in modern beekeeping will be on hand for use in demonstration by the instructors and for study by the members of the class. Any person interested should write to Geo. A. Coleman, University of California, Berkeley, Calif., for the program of these beekeeping short courses to be given next month, and for application form.

QUESTIONS.

—(1) What do you think of the plan of having two queens in one hive, in order to have a large force for a future honey flow? I tried this with two new swarms. The two colonies were separated by a queen-excluder, and each colony was supplied with its own queen. The lower colony contained full combs and some stores. One of the colonies raised 14 and the other 15 frames of brood, and then I took one queen away from each colony and raised all the sealed brood above, while the queen and the unsealed brood were placed below. These swarms were monsters. (2) Some beekeepers contend that sugar syrup fed exclusively to bees when there is no honey in the hive will often cause the queen to be killed. Last winter I knew of quite a number who fed sugar from July until Apr. 1, and there was absolutely no honey coming in, yet none of the queens were lost. I want to know what your experience has been along this line.

Texas.

Answer.—This plan has been tried on a few colonies in one of our apiaries, and we may say if one does not object to the extra lifting, the plan is a good one, for these large colonies certainly do roll in the honey. (2) In answer to your other question we may say that we have often fed sugar and yet have never found that it resulted in the loss of queens.

Questions.—(1) A beekeeper here, who has had 50 years' experience with bees, never robs his bees (he calls it robs) until the last quarter of the moon in March. He says if he doesn't take the honey from them then, they will destroy it to make room for new honey. I say they will not. What do you think about it? (2) Is it advisable to change the brood combs every two or three years to keep the workers the normal size? In other words, do the brood combs wear away and have to be replaced?

Oklahoma.

J. W. Young.

Answers.—(1) You are entirely right. Bees do not remove the honey from the hive in order to make place for new honey. Any extra honey that they may have, which they do not use up in brood-rearing, is saved over for winter stores, unless removed by the beekeeper. (2) Brood combs do not wear out, but may be used for a life time. Instead of wearing out, the cells continually become thicker, as new cocoon walls are continually added, so that it is occasionally necessary for the bees to remove some of these inner walls in order to make room for the young larvæ. It is possible that a frame may wear out in time or become broken, but the comb itself is kept in repair by the bees, any broken comb being quickly repaired during a honey flow. Sometimes drone comb needs to be cut out and replaced with worker combs, but aside from this the same combs may be used indefinitely.

Questions.—(1) When a laying queen is taken from a hive, how long may she be kept in an introducing cage until one is ready to introduce her to another colony? (2) If a colony becomes queenless about the 15th day of September after the hon-



Iona Fowls

ey flow, and the weather becomes quite cold all of a sudden, could they rear themselves a new queen providing there were eggs in the cells? (3) When one wishes to increase by taking say four frames

of sealed brood, the queen may be given to such without introducing, but will the queen stay, when there are no bees on the frames with her? And would it be a good plan to screen the entrance until some of the brood hatches, so she cannot get away?

Wisconsin.

M. E. Larson.

Answer.—(1) In the ordinary mailing cage, if the queen is given an escort of bees, she may be kept in this way for a week or so. In export cages, queens sometimes live over a month; and, if put in cages without attendants, and placed over the top of the frames of a super, the queens may remain in the cages alive for two or three months. (2) If a colony becomes queenless the middle of September and the weather is very cold, the colony may be able to raise a new queen if provided with eggs or young larvæ. However, there would be a question as to whether such a queen would be mated or not, for in October there may be very few or no drones in the apiary. (3) The entrance should be screened until some of the brood have had time to hatch, so that the queen will be certain to remain. This plan can be practiced only in warm weather, and unless the weather is very warm the hive should be placed in a warm room or over a strong colony with a wire screen between, in order that this brood may have the heat of the lower colony. Since no bees are given with the queen, the hive must be kept very warm, somewhere near 90 degrees Fahr., if possible.

Questions.—(1) Under the Somerford plan of making nuclei how can the bees get eggs to raise queen-cells when the queen is removed or caged. Any eggs the bees would lay would produce drones, wouldn't they? (2) Some beekeepers of Marion, Ia., have a swarm-control plan for sale. They want ten dollars for it. This might be the same as that given in Gleanings (June, 1918). Please let me know what you think of it.

Missouri.

W. F. Schimmel.

Answers.—(1) At the time the queen is removed the colony still has in the hive eggs laid by the queen and therefore suitable for raising a new queen. (2) Those who know the most about honey production are not offering for sale any swarm-control plan. What they know they are willing and glad to give for the asking. Better hang onto the \$10.00.

Question.—For treating American foul brood, is this plan O. K., to raise the hive of diseased bees placing under it a bee-escape board, a new hive with full sheets of foundation, and then a bottom-board below that?

Oregon.

R. G. McAllister.

Answer.—We do not like the plan of confining the bees above a bee-escape when treating for foul brood. The escape is about

certain to become clogged with dead bees. The bees of the diseased hive then, in their efforts to escape from their imprisonment, raise the temperature of the hive to such an extent that oftentimes the combs melt and honey runs down the sides of the hive. This is soon found by robbers and thus the disease spreads. Even if the escape does not become clogged, the employment of this method makes it impossible for the beekeeper to examine the lower colony at any time while the diseased colony is above, and the diseased colony would have to stay in place for at least three weeks in order to allow all of the brood to hatch. The reason that the upper story could not be removed to examine the lower is that at the least jar the bees from the diseased hive above would load up with diseased honey, pass down thru the bee-escape, and store this honey in the cells of the new hive, thus spreading the disease below. On page 293 of the May issue of *Gleanings in Bee Culture* you will find given a much better plan for treating American foul brood. We know of this plan being tried in an apiary of 23 colonies affected with American foul brood and not one cell of the disease ever showed afterwards. If skunks or stock are allowed access to the apiary, some provision should be made by which it will be impossible for the diseased hives to be jarred in the slightest. If this precaution is observed, we believe you will have decided success with this plan.

Question.—Can you give me any facts concerning the annual honey production in the United States?

Maine. H. M. Daniels.

Answer.—Government reports place the United States annual honey production at 250,000,000 pounds, stating that this is 3 per cent of the amount of sugar consumed in normal times, and is probably less than 3 per cent of the nectar available.

Question.—Will you please tell me what to do with European foul brood colonies at this time of the year? I have just found two colonies having this disease.

Ohio. Selah M. Shuey.

Answer.—If the colonies are badly diseased it would hardly pay to attempt saving them. Moreover, if you have a number of colonies that have not yet contracted the disease, the safest plan would be to sulphur the foul-brood colonies and render the combs before giving the disease a chance to spread to other hives. Otherwise we would advise delaying treatment until next spring, uniting the weak colonies and contracting the brood-chamber of the strong ones to seven or eight combs.

Question.—When I opened my hive one day, I was interrupted at my work, and therefore laid aside the brood combs. Two or three hours later I returned and found some of the larvæ protruding from the cells, and some of them came entirely out of the cells. What caused the trouble, and will all the brood be damaged?

Ohio.

Lulu Henderson.

Answer.—When handling a colony of bees, the hive should never be left open or

the combs exposed for several hours. In fact, the hive should be closed again as soon as the work can possibly be finished. To leave it open in that way not only invites robbers but also kills the young larvæ and oftentimes the brood. The larvæ that you saw protruding from the cells were starved larvæ. They need to be fed quite often when in this stage, and, having exposed them in the way you did, the nurse bees were not able to feed them as they should have. In all probability the capped brood was also destroyed, as it would be quite certain to be chilled by that time.

Question.—I have five hives, each having two comb-honey supers for $4\frac{1}{4} \times 1\frac{1}{8}$ sections. Now I have decided to produce extracted honey instead of comb honey and can exchange my comb-honey supers for full-depth extracting supers with good combs. A neighbor suggests that I exchange my comb-honey supers for half-depth supers. If I do this, I shall be compelled to use full sheets of foundation, as I cannot secure combs for half-depth supers. Please give me your judgment.

Michigan.

C. E. Laremen.

Answer.—If you prefer the shallow frames, why not transfer the combs from the full-depth frames into the shallow ones? If cut horizontally along the middle line, the deep comb will just about fill two shallow frames. There will be about a half-inch space along the top bars, but, if the comb is tied in securely, the bees will soon attach these combs to the top bars. Of course, this space will be filled in with drone comb, but this will do no harm, since the shallow combs will be used only for storage of honey.

Question.—I am bothered considerably with spiders about the hives. Is there any special way to keep them out?

R. T. Spencer.

Ohio.

Answer.—The spiders will probably do but little harm. It is possible that some bees might become entangled in the spider webs and it would therefore be well to destroy the webs and perhaps kill the spiders that are stationed near the entrances of hives. Spiders, however, are often considered the beekeepers' friends, and are even placed inside of some honey-houses in order that they may keep the combs from becoming moth.

ANSWER BY MEL PRITCHARD.

Question.—I have been using two-frame nuclei for queen-rearing, and after removing laying queen have tried putting in ripe cells (in protectors); and have had poor success in having them accept the virgins, altho I have put them in at different periods after removal; but they seem to want to rear their own cells from larvæ they have. If you can give me a successful plan, I will appreciate it.

Alfred Smith.

Ontario.

Answer.—Two-frame nuclei, "especially where they are strong," are difficult to introduce cells to. We have the best success by giving them cells (in protectors) that are not due to hatch for four or five days. These are put in the same day that the laying queen is taken out.

"I HAD intended to contribute further to Gleanings in Bee Culture ere this, but the very abnormal conditions of affairs prevailing here have so far prevented me carrying out my intentions."—C. H. Boccock, Newmarket, England.

"Honey crop a total failure in this district."—O. J. Goodmansen, Morrison County, Minn.

"We had a very large crop of clover and buckwheat honey here this year."—F. W. Dean, Susquehanna County, Pa.

"The honey crop has been an absolute failure in this vicinity this year."—Ralph A. Irwin, Grant County, Wis.

"The honey crop was small here this year. Swarming came in August and big ones too."—Robert G. Norberg, Isanti County, Minn.

"I greatly regret the death of the late G. M. Doolittle. Altho I was not acquainted with him personally I feel as if I had lost a brother."—Donald A. Spratt, Belize, British Honduras.

"Slowly but surely bee men are learning to 'take out life insurance' for their bees in plenty of good stores and plenty of good packing."—Edw. G. Baldwin, Bureau of Entomology, Washington, D. C.

"The season is nearly over, yet if it should remain warm a while longer, much honey would be gathered—the good golden kind."—W. H. Thornberry, Saline County, Ill., Oct. 1, 1918.

"Last year I tried buying five one-pound colonies and uniting here. It is away ahead of buying five pounds of bees in one container. I bought in about 300 pounds of bees last year."—E. M. Brundage, Saskatchewan, Can.

"Some of my colonies made me 200 pounds of honey, and not one of them that produced 200 pounds has ever swarmed or tried to swarm. I want to build up from them next year."—Joseph B. Fleming, Monroe County, Pa.

"Fine honey flow here from late cotton bloom. If the frost holds off till the last week in this month, the prospect is that bees will go into winter strong in young bees and plenty of stores of the finest quality. Possibly some surplus, too."—H. D. Murry, Fannin County, Tex.

"I notice that J. L. Byer says bees do not need packing under the hives. Now, as he claims to have tested the matter that should settle it. But there is one thing I should like to know: Were the cases close to the ground? If they were not, then a free circulation of air under must be as good as

BEES, MEN AND THINGS

(You may find it here)

extra heat; for surely a colony with packing under it must be warmer than one without. Of course, if the case is on the ground that makes a differ-

ence. I prefer free air under the case, as I believe there is less dampness, and the bees seem to winter just as well."—Thos. Martin, Ontario, Can.

"I took over 500 pounds of honey from six colonies this year. That is not so bad, is it, for a dentist? I used the double brood-chamber method that I saw recommended in Gleanings last spring, using a queen-excluder and transferring the frames of brood above."—Wm. Schaeffer, Lorain County, O.

"I am keeping bees in Florida in the winter and in Indiana in the summer. I am a producer of fine bulk comb honey. I sell it readily for 25 cents a pound. But I find some parties in Florida selling extracted at 15 cents and others even as low as \$1.00 per gallon. Oh, shueks!"—Joseph H. Collins, Madison County, Ind.

"What I like about beekeepers is that they have no secrets concealed from each other. If there is anything you wish to know, just ask concerning it and, if they know, they will tell you, and if they don't know the most of them have the courage to say they don't know."—Edwin A. Wright, Lawrence County, Pa.

"In regard to those Holtermann sky-scrapers shown in October Gleanings, and this, too, in the face of foul brood, and (as he has said) an ordinary location, I will say this: That Holtermann has a very mild attack of European foul brood, or he has none at all, or he had a mighty good cure."—John Smith, Cherokee County, Kans.

"I recently sold three barrels (50 gallons) at \$1.50 per gallon. As the Cuban buyers can not ship to New York on account of the embargo, I would like to know if they ship to Liverpool direct or some other European port. I notice that Taylor & Co. of Liverpool quote in Gleanings \$5.25 a gallon for Cuban honey. It seems to be a tremendous difference between \$5.25 and \$1.50."—F. McCann, LaGloria, Cuba, Aug. 19, 1918.

"I introduced about 15 queens by the smoke method as outlined in the A B C and X Y Z of Bee Culture, except that I used nuclei instead of full colonies. Some of these queens were just transferred from one hive to another, while others were straight from the mails. In every case the queen introduced was laying by the next day. I can only add that I like this method much better than any other method I have tried."—Walter Fleming, Brantford, Ont.

"I neglected to send my subscription for Gleanings in Bee Culture. If I had done so,

it would have made a difference to me, as I sold my honey crop quite a little under the market. Please renew it. Have seen the July number and was surprised at the prices of honey quoted in your journal."—Oscar E. Browner, Herkimer County, N. Y.

"Last spring Edgar C. Polhemus and Cora D. Polhemus divided the bee business of the late D. C. Polhemus. We each got 515 colonies on May 1. We have had a good crop of honey and of good quality and color. One of my yards of 110 colonies averaged 90 pounds to the colony. I attended the National convention at Burlington, Ia., last year and expect to be in Chicago this winter."—Mrs. Cora D. Polhemus, Prowers County, Colo.

"I had, spring count, 75 colonies. My yield was 13,440 pounds of choice honey. The best individual colony yielded 600 pounds of wax and honey. Several others (not calculated separately) must have yielded very little short of this amount. Sources of supply are orange bloom, some white clover and fruit bloom. The bloodwood yielded about three tons, 18 cwt. of clear mild honey which candied to a snow-white hard candy in less than a week after extraction. This was sold for export but is held up for want of shipping space."—W. Hessel Hall, N. S. W., Australia.

"We live in East Jordan about five months in the summer and resume our work theatrically in the winter. Have 20 colonies of bees. We bought our ten-acre place four years ago, and set it all out to fruit, 800 cherry trees and quantities of small fruit. Started the first year with two colonies of bees and increased each year until we now have 20 colonies. We took off over 1,000 pounds of honey last summer. We love the study of bees, and our place would be unbearably lonesome without them. Our stage name is Hanson & Drew."—Mrs. J. Y. Carlisle, Wayne County, Mich.

"Basswood is the universal name in America for this marvelous tree (the linden). Basswood is simply 'bast-wood,' the tree that furnishes 'bast,' the fibrous inner bark, from which primitive man made him mats, cordage, and fishing nets. Here it is named—who knows why?—from its utilitarian value, and there is a break in its historic and poetic past. For 'linden' seems a foreign affectation, bookish, literary. Few reading 'The old house by the lindens stood open in the shade' connect the shade trees with the basswood of popular speech. 'Line,' 'lime,' 'linden,' are 'all one reckonings, save the phrase is a little variations,' as Captain Fluellen would say. The plain American basswood is lawful heir to all the history and romance of the linden, but on account of this unfortunate change of name can never enter into its inheritance."—The Nation.

"This is where the natives trap bees by putting a bark cylinder about two feet long

and thirty inches in circumference, in the fork of a tree. June is the month for robbing, and it makes a beekeeper weep to see the way they smoke out the bees and then shove their bare arms in and pull out the comb. If they get stung, they say the bees are 'penza,' which means mad. A swarm goes thru the air like an express train, with very nearly as loud a roar. September and October are the swarming months here, as the rainy season sets in in November. The honey is very dark with a flavor of something resembling brown moist cane sugar."—J. E. Titterton, Zimbabwe, Rhodesia, South Africa.

"My father was a successful bee and honey manager, always at this time of year having hundreds of pounds of honey; but since his going the farm tenants have occasioned a total loss of all the bees and I deem it needful to resort to only qualified and careful beekeepers for the successful handling of the honeybees. We have much buckwheat, white clover, various blooms of trees and plants, besides the noted basswood, and our best farm is situated so that the little workers may bring their burden down hill. Only today I had delivered by the express company two kits of strained honey from a distance, which cost us three times the old price we once were pleased to sell honey at from one of these same farms where bees flourished finely under primitive conditions 50 odd years ago; but now we can no longer adhere to chance—all is law."—C. W. Griggs, Lycoming County, Pa.

"The article in your September issue, page 533, 'Stores for Winter,' no doubt gladdened the heart of many a beginner, who like myself had been wondering what was meant by 'rich in stores,' 'plenty of winter stores,' and other vague statements. At last we were given definite figures and weights by no less an authority than Mr. Doolittle. Wishing to verify these figures, I carefully weighed my hives, empty hives, hives with combs, hives with foundation, covers, bottom-boards, and 'other things too numerous to mention,' and found the following remarkable discrepancy. A standard dove-tailed 10-frame hive, white pine, painted, with reversible bottom-board and double wood cover flat (Lewis make) with new combs, weighed just 37 pounds, or 17 pounds more than weight given by Doolittle for a hive with old combs. If, as Doolittle says, old combs weigh double as much as new ones, the weight would have been about 40 pounds. According to Doolittle's figures the weight for outside wintering should be as follows: Hive with empty combs (old), 40 pounds; bees and beebread, 5 pounds; honey, 40 pounds; total, 85 pounds. If, as Doolittle says, a total weight of 65 pounds contains ample storage for outside wintering, then 20 pounds of honey would constitute a full winter supply."—W. E. Reim, Dodge County, Wis.

SOME 40 or 50 years ago the liquor business was in the habit of having pretty much its own way. When the churches and good people who believed in prohibition tried to do something, the liquor people laughed us to scorn. They said in action if not in words,

"Help yourselves if you can;" and we proceeded to enact laws which were promptly trampled under foot; and when we tried to get good men in office who would enforce the law without fear or favor, they again laughed us to scorn.* When we were defeated again and again they had even the audacity and cheek to say, right to our faces, things like this:

"Every man has his price. You folks have not enough money, and never will have, to enable you to interfere seriously with our traffic."

Things went on after this fashion until perhaps 30 years ago. At that time Ernest and my son-in-law, Mr. Calvert, were attending college at Oberlin. While there they became acquainted with a theological and law student by the name of Howard H. Russell. Mr. Russell, even in his college days, had the audacity (I guess that is the proper word) to think that he could mass the churches, political parties, and the good people of our whole nation together so that they could successfully fight the great Goliath, King Alcohol. The boys told me about it at different times as they came back to their old home. Let me digress a little right here.

On account of my failing health, perhaps by too close application to business, about this time the boys were called from college before they had finished their prescribed course, and took charge of the business, calling it "The A. I. Root Co." Notwithstanding the help this gave me I came down with a nervous malarial fever; and, altho I recovered after a fashion, a council of doctors declared I would never be a

*The city daily papers and, to some extent, country papers uttered no protest, because they got big prices for running liquor and beer ads, "liquid bread," etc.



Who is this uncircumcised Philistine, that he should defy the armies of the living God?—I. SAMUEL 17:26.

I come to thee in the name of the Lord of hosts, the God of the armies of Israel, whom thou hast defied.—I. SAMUEL 17:45.

They shall run, and not be weary; they shall walk, and not faint.—ISAIAH 40:31.

Lord, now lettest thou thy servant depart in peace, according to thy word.—LUKE 2:29.

well man. They said I would have to give up business entirely and that I had better go away off to some sunny clime—perhaps California—and take things easy during the few years I probably would have to live. After I was well enough I put off. At Portland, Ore., I was down with my old trouble once more, and sent for the best doctor in the city. In a little while he told me the same story. He advised me to inform my wife that if she wished to see me alive she should come to me quickly. I have told all about this in the back numbers of our journal. Mrs. Root hustled off, took charge of my diet, and, knowing me personally better than any other person in the world did, she soon had me on my feet, and got me back home in fair shape. By the way, good friends, this is by no means the first time that a good wife has proved to be of more account than (I was going to say) the best doctors in the whole wide world. If you, my good reader, have not a wife, and you are old enough to have one, you had better "get busy" right away, "that your days may be long in the land." In fact, Mrs. Root got me in such fair trim that I followed the trail and climbed Mount Wilson on foot before we returned to Medina. Many of you have read about it, and remember what I said about that precious gift from the loving Father—a "second wind." When I got back home I proceeded to take the doctor's advice and take things easy. But perhaps I was not "built that way." My old trouble came back, and I was moping around thinking my end was near.

About this time Ernest came over one morning—I think he was riding a wheel. He said to me something like this:

"Father, since the doctors have given you up I want to give you a suggestion."

I do not know but I was a little vexed because he assumed, or seemed to assume, his fitness for such a responsibility. He explained that he wanted me to try riding a wheel. I replied:

"Why, my dear boy, I could not sit up

on a wheel, much less furnish* strength to propel it."

But he finally induced me to get on the wheel and tried to start me off. Of course I fell over because I had no faith in him nor in the wheel, and I might also say I had little in the great loving Father. Yes, I had prayed over the matter of my health, but, I fear, as so often happens, without very much faith. At Ernest's urgent solicitation I tried the wheel again—maybe several times. Finally one morning he urged me to try it "just once more." I objected, but he was importunate. Of course Mrs. Root and the children sided in with Ernest. Finally I said something like this:

"Just to keep peace in the family I will try the thing once more; and after that I never want to hear it mentioned again."

Now what do you suppose happened? I did not manage to get off right where I had planned, and finally put a little force on the pedals at a place where the road was downward. It finally got to going so fast (downhill) I could not well get off, and, as I did not know how to stop, I concluded that my best way to dismount was to go to the top of the next hill; but about that time my faith and courage began to arise. I went down that hill and up another, and went on till I was pretty well out of sight. When I was rested a little, instead of going back home I decided to play a little trick on the good wife and children, and go ahead. I knew of a beautiful soft-water spring at a place called Spruce Run. I managed to get over to that spring, and had a most delicious drink of that beautiful cold soft water. It revived my spirits and kindled my enthusiasm to such an extent that I went on to Sharon Center, eight miles from home. There I had such a dinner as I had not enjoyed before for months. Then I took a nap to rest up well, and got back rejoicing in the prospect of "a new life." In fact, I recalled somewhere in the Bible where there is a promise to God's loved ones something like this: "They shall run and not be weary; they shall walk and not faint."

I found the family much worried for fear I had fallen off by the wayside and perhaps could not get home. Next morning I was off for another ride, and it was more rides every day and new life. Some time after this I met our old family physician on the street. Said I:

"Doctor, you may remember you said I would never be a well man again."

With a smile on his face he nodded. Then I went on:

"Well, doctor, you physicians make mis-

takes, do you not? I rode half way across the State of Ohio yesterday."

He replied:

"Yes, Mr. Root, it is true. Doctors *are* human like other people; but had you told us, when we pronounced our verdict, that you were going to quit business and "play boy" again by riding a wheel as you have been doing, we might have changed our decision. From past experience we judged *you* (like others) would soon get back into the harness again, and that would finish you up. Keep on riding your wheel. But remember, this thing is hanging over you, and probably will be to the end of your life."

Perhaps I may tell you that I soon rode pretty much all over Ohio. Then I had quite a trip over the Ozark Mountains by wheel (visiting beekeepers) down in Missouri and later over Yellowstone Park, Colorado. When winter came on I rode pretty well over Florida, then I went to Cuba. I visited beekeepers on their beautiful smooth highways by means of that same wheel. Another winter I rode over the wonderful English highways in the Bermuda Islands and studied potato culture there. You will find all about it in our potato book.

Now, there is a great moral in this little story I have just been telling as a kind of side issue to this Home paper.* Two things gave me back a new lease of life—first, being constantly out in the open air; second, developing every muscle in my body by wholesome exercise outdoors. Perhaps I should add a third—having "a hobby to ride," as well as a wheel. Now, it is not necessary that you good people who are suffering from poor health should *all ride a wheel* in order to become interested in some line of developing and bringing out the possibilities of God's gifts. Down in Florida, in California, and all over the world, there are people who have "run away from their own funerals" by getting interested in some outdoor occupation. Sometimes it is chickens, or bees, or any similar line of work. You will find healthy long-lived people all over Florida who have got back to health, after being given up by their doctors, by becoming enthusiastic in growing some particular thing in winter—something that no one else has done before; getting new potatoes when there is not a new potato in market (as I did) in Florida dur-

*The good wife got me thru the siege in California, and later on the boy Ernest came in when the doctors failed. And I said every young man should have a wife when he is old enough. I want to add also, some boys and girls, providence permitting.

ing the past winter, is along the same line.

Let us now get back to Goliath, and to David with his sling and the pebble he picked out of the brook. One morning Ernest informed me that Howard Russell had called a meeting in Oberlin, Ohio, (May 24, 1893) to discuss his project in starting what he called the "Anti-Saloon League," and suggested that I go over on my wheel and report. Of course during all these years I had been red-hot on temperance as usual. It was a small meeting so far as numbers were concerned, but there were present some of the best men, not only in Oberlin but in Ohio. Mr. Russell outlined his plan, which was to unite all friends of temperance. It was to be non-sectarian, non-denominational, and its purpose was to wage war against the liquor traffic. As an illustration along the possibilities of law enforcement he had, during the previous winter, been engaged as pastor in one of the leading churches in Berea, Ohio. There were, perhaps, half a dozen saloons in Berea at the time. Like all other saloons they sold to everybody, boys included, without any regard to law or gospel either. Well, during the winter Russell got a number of boys to go to the saloons and buy liquors. Each bottle was labeled with the date, name of the purchaser, and name of the saloon-keeper. When he had a bushel basketful of such labeled bottles the saloon-keepers were called up before the mayor. When they saw that basket of bottles they realized they were "caught, red-handed" in the violation of law; and even the saloon-keepers' attorneys owned up they were whipped: If I remember correctly they said to Mr. Russell, "What do you want us to do?" He told them he wanted them to quit the business, and added that he would drop legal proceedings if they would do so. Now, my impression is they quit, and that Berea went dry. This was to illustrate the *possibilities* along the line of law enforcement, if you go about it right. After the meeting an old gentleman by the name of E. W. Metcalf came to me and said something as follows:

"Mr. Root, nobody knows the outcome of what has been started here today. It promises deliverance from this great giant that has been cursing our nation like an octopus for centuries past. Now, this undertaking, like every other great revolution for righteousness and godliness, *needs money*. They should have one thousand dollars to start with. Nothing less will enable it to get on its feet. I will give half if you will give the other half."

I explained to my good friend that I

agreed with him; but as our business had been turned over to my son and son-in-law I could not make any agreement until I consulted the boys.

"All right," he said; "and I will go with you and we will talk it over."

He made a visit to Medina, and, somewhat to my surprise, the boys, knowing Howard Russell, agreed to it. Let me tell you right here, friends, that 25 years ago five hundred dollars was not hanging on every bush as it is now; and it was quite a task for us to scrape up that amount then. During the past 25 years the Anti-Saloon League has had its victories and its defeats—for a time mostly defeats. I remember that at one of the meetings when Mr. Russell had outlined the work we had to do he said something like this:

"Friends, the outlook now is quite hopeful—more so than at any time during the years past. But if we are beaten *again*, we must not become discouraged nor must we stop a minute."

Then he outlined what was to be done in case of defeat. By the way, friends, I spoke a little back about the wets claiming that every man has his price. At that big national convention at Oberlin on May 24, 1918, when some three or four hundred people were present, Wayne B. Wheeler, who had been with the organization almost as long as Mr. Russell, made the remark that he had been recently offered the sum of ten thousand dollars to let up in his prosecution of lawbreakers. He told the liquor men that *ten million dollars*, even if they could scrape up that much, would be no temptation; and they have found a good many times just of late that the saying that every man has his price is *not true*. May God be praised, that it is *not true* during these war times!

When I started wheel-riding, as I have told you, somebody said, jokingly, that I had "run away from my own funeral riding on a wheel." Well, friends, I have kept away from that funeral until I am 78 years of age; and I am praying that the Lord may let me live still a little longer. I want to live to be on hand and *present at another funeral*—that of John Barleycorn; and may it be his funeral not only in the United States but in the whole wide world. And if this comes to pass as the result or the outcome of this awful war, it will save more lives in the future than have been lost by the war, and contribute to human happiness more than anybody can comprehend. And when this funeral comes to pass, then I shall be ready to say in the language of our concluding text, "Lord,

now lettest thou thy servant depart in peace, according to thy word."

Later.—It is now September 9, but our friend Howard H. Russell is still in the harness. The letter below explains itself:

My Dear Friend Root:—Now I am making a second visit to Florida to assist the workers here a little in the final drive to brighten up this corner of our United States map. Supt. Crooke has been doing heroic and tireless service. You perhaps have heard the details somewhat of the closing down of the rum traffic in Duval county, which put the business out of operation in one of the swampiest localities we have had in the country, viz. Jacksonville. The changes made here already are perceptible to the naked eye and without either telescope or microscope. A great many people whose sentiment has been heretofore in favor of the sale of liquor are now converted to prohibition, the same as has been the experience of thousands of voters, especially the business men, in Denver, Portland, Seattle, Detroit, and other cities. Also Nassau county, where its county seat, Fernandina, has been supplying liquor to the thirsty Jacksonians since Duval county went dry, has been put under drought conditions by a majority in the whole county of over two hundred. Add to this a recent victory in Okeechobee county on the East Coast, and you will understand that our League workers have been doing good service.

One of the most gratifying incidents of our pleasant reunion and anniversary at Oberlin was to see you and Ernest there and to hear those earnest words, from your heart, of thanksgiving to God and of grateful satisfaction that you have lived to see the wonderful revolution in sobriety and anti-liquor reform in which you have had so long and vigorous a share. When we were having our conferences together at Medina, we were quite in the dark as to how long it would take, and the chances seemed then to be we were starting something others would have to finish. In a few weeks now we shall reach the quarter-century anniversary of the writing of those two checks for \$500 each by Mr. Metcalf and yourself, which first stirred the Buckeye State with the fact that something was really doing. It looks now, dear old comrade, as if we should both be permitted to attend the post-mortem wake and jubilation of completed victory. God grant this. Affectionately,

HOWARD H. RUSSELL.

Jacksonville, Fla., Sept. 3, 1918.

In addition to the above I have just been thanking God several times a day that last Saturday, Sept. 7, the *Cleveland Plain Dealer* informed us that all breweries in the United States would have to quit business Dec. 1, at least until the end of the war. So you see things are coming our way just now, at least for a time. Praise God, from whom all blessings flow.

NORTH DAKOTA AND THE MANIKOWSKIE FAMILY.

When I saw the wheatfields and cornfields in North Dakota I was, as a matter of course, interested in the gardens; and I was up the next morning, I rather think, before anybody else had been stirring, and interviewing George's garden. It was one

of my happy surprises to see such a wonderful growth of potato vines at the time I was there, the last week in August. The potatoes covered the ground so that it was almost impossible to find a place to plant my foot; but they were already digging them every day for dinner, even if the tubers were not yet half grown.



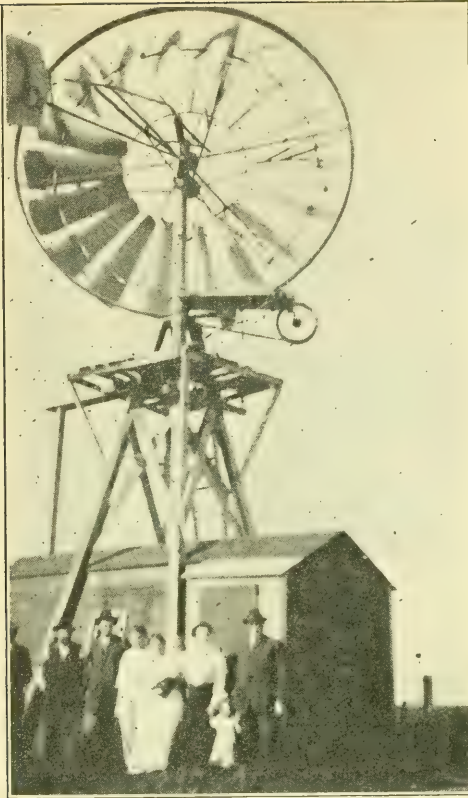
1. A single potato stalk from a garden in Wyndmere, N. D. Mr. Forrest and "yours truly" are holding a branch.

I had not been up very long when Mr. Forrest joined me. You may remember I said he got in after I had retired; and, soon after, George himself appeared. I asked him to get a kodak and take a picture of a single potato stalk, and here you have it. This one stalk or branch where it came out of the ground was pretty nearly as large as a hoe handle, and there were three or four others in the same hill very nearly like it. This garden was a pretty fair picture of most of the gardens in and around Wyndmere. Potatoes, corn, and



2. Mr. Forrest, "yours truly," Mr. Manikowske and his son Wallace, his daughter Ethel, and the good wife.

everything seemed to be far in advance of those I left in Ohio. When I asked if he had not put on a large amount of stable manure or fertilizer, he replied that chemical fertilizers were unknown in North Dakota, and in a good many places they ob-



3. The first original electric windmill for generating electricity for farm use.

jected to stable manure because it makes such a growth that the wheat and oats fall down wherever the manure is applied. By the way, when I visited Mitchell, S. D., something like 30 years ago, they were hauling the manure out of town to a river-side and dumping it in the water. They said the land did not need it. I do not think that any of that kind of work is going on now. The beautiful gardens, and the large amount of stuff they were growing, so impressed me that I felt a great desire to spend one summer gardening in North Dakota.

I think I have remarked before that the Manikowske family are geniuses. There are two boys and two girls. Every one of them seemed bent from childhood on getting an education, but they chose different lines. I have had a good deal to say about George. Well, his brother, seen in the picture, is a good deal like him; but his bent seems to be in a different direction. The two girls are both teachers. The one in the picture, with a pair of feminine overalls, had a letter offering her a large salary

to teach, instead of helping her father on the farm. The matter was referred to me for my advice. After reading the letter and studying on the matter for a while, especially considering her mechanical skill, I advised her to help harvest the present tremendous crops and thus relieve her father of considerable care and worry. I now want to tell you a little story about George's brother, shown in his working rig beside his father.

While George's hobby was windmills and electricity this brother was crazy about *music*. One spring when the weather was just right for cultivating the corn, and the work was away behind, the two boys went out each with a team to cultivate. Well, this younger son had just got hold of a little piccolo. He had always been crazy for a fife or a flute. The piccolo was made in two pieces. The boy put it in his pocket when he went out to cultivate, and by some mischance a part of the instrument slipped out of his pocket, and, of course, it was buried in that fine soft soil by the cultivator. Some time during the forenoon the father came out to see how the boys were progressing. He was greatly vexed to find them both down on their hands and knees grabbing over the dirt to find the missing part of the piccolo. I think likely he scolded a little; and I am afraid that if I had been in his place I might have said things that I would have been sorry for afterward. They found the missing part, but George said they clawed the dirt over for pretty near a half a mile before they found it.

Well, the boy kept practicing in his spare moments on the piccolo. Then he



4. A. I. Root helping to harvest the crop in North Dakota.

bought a flute, and pretty soon he bought a better one. He was frequently asked why he wasted his money on such "fool contraptions." When he paid out over \$200 for one of the best flutes the world could furnish, the friends and neighbors thought of him as they did of me when I paid \$20

for that one Italian queen bee. Well, I saw and heard the boy play on his \$200 flute. The sister standing next to him in the picture played the violin while somebody else played the piano. And what do you think happened? Several times, if I remember correctly, this boy has been paid \$100 to go and play just one evening for some particular entertainment with his \$200 flute. Do you catch a glimpse of the moral? Do not scold your boy if he does not happen to be just like other folks, especially if he should take a notion to push off in some eccentric way as did that boy with the piccolo and his brother with the windmill.

We are now ready to get back to the windmill. It was my pleasure to see the original windmill invented and put up by George Manikowske. As it is out on the level plain they did not think it necessary to put up a very high tower; and there are no trees or buildings to interfere with the wind except in one direction, and that is right around the homestead. I asked if it was not true that the mill did better work when the wind did not come from the direction of the trees and buildings around the home, and I was told that it did; but so far it has furnished sufficient current for all purposes about the farm. The storage batteries are located in the attic of the house, as they seemed to have more room there. A cellar is always a better place than an attic because the evaporation from the acid in the batteries is not as rapid. The individuals in the picture are about the same as those I have mentioned before, George and his wife and one of the little girls being on the right hand. Very likely the father was a little disappointed to find that none of his boys (or girls either) seemed to take kindly to farming. One took to electricity, another to music, and the two daughters are both teachers. The good father was wise, however, in not sitting down too hard on either of his two boys. If I got it right, when the electric windmill was first started, with some misgivings, he mortgaged his farm to get the invention on its feet.

Elsewhere we give you a picture of "yours truly" driving a four-horse-power harvester. George's mother stood beside me and told me what levers to push and which to pull, etc.; and I am afraid she considered me a rather stupid pupil, for I had gone almost around the half-mile field before I caught on to just what was wanted.

May God speed the people of North

Dakota in their effort to do their bit toward feeding the world and thus ending the war.

"KING BARLEYCORN IS DEAD, KILLED BY THE WAR."

The *Philadelphia Farm Journal* was started shortly after GLEANINGS, 42 years ago, and it has been my privilege to see it grow for more than 40 years. Below is what the February number starts out with:

WAR HAS BROUGHT ONE BLESSING.

Like a beam of white radiance from the war-pit of darkness, has suddenly come a wonderful thing—a National Prohibition Amendment to the Constitution. Had there been no war there would be no Amendment now.

If our boys in the trenches win no other thing but this, their sacrifice has not been in vain. If the war brings no other reward than this, it is worth all it costs in treasure and lives.

Thank God for the patriots in Senate and House who voted "Aye!" And hats off to the States that will now, please God, soon ratify the Amendment and close every distillery and bar in America forever!

Our children soon shall never again see the swinging doors of a saloon, nor hear the music of a cabaret, nor read a liquor advertisement. King Barleycorn is dead—killed by the war.

ANOTHER REASON (AND A BIG ONE) FOR VOTING OHIO DRY.

The *Plain Dealer* for April 1 contains an article headed as follows:

U. S. OPENS SOCIAL DISEASE BATTLE; PHYSICIANS TO BE ORDERED TO REPORT ALL PATIENTS TO HEALTH BOARD.

From this article we clip three paragraphs, as below:

Dr. Cole said medical authorities estimate that 10 per cent. of the population of Ohio is afflicted with syphilis and that this figure does not include milder forms of social diseases.

He announced one of the distinctive features of the campaign will be a vigorous fight for total abstinence.

"Booze," he claimed, could be held indirectly responsible for 68 per cent of all cases of venereal diseases.

Extreme danger from these diseases, Dr. Cole stated, has been emphasized by war conditions and has resulted in a request by the federal government to state authorities systematically to root out the menace.

PROHIBITION, AND THE AWFUL (?) CONSEQUENCES THAT FOLLOW.

The clipping below comes from the *Jacksonville Times-Union*:

Prohibition is accused of waste in that the value of many investments has been destroyed. One of these is the great jail at Birmingham, Ala., which cost thousands, and must now be sold for a factory, since the county has no use for it. How many counties supported so many drunks in the late past?

Special Notices by A. I. Root

THE ITINERARY OF A BREAKFAST

BY J. H. KELLOGG, M. D.

If you want an "inside view" of what happens to your breakfast after putting it in your mouth, you will read this book with interest. By means of the wonderful possibilities in the use of the X ray the doctor traces the breakfast thru the entire system.

By the way, while I heartily indorse the book as a whole, I am not yet ready to agree that it is the right and proper thing for *myself*, to have my bowels move three or more times every day. Dr. Kellogg, while discussing the matter, admits that Horace Fletcher and probably other good authorities do not agree with him. I am ready to admit that, while many people get along very nicely by having a movement of the bowels after each meal, I feel satisfied that my makeup does not seem to favor such a program.

In the back part of the book I was much pleased to read what is said about nuts as a substitute for a meat diet. I was also interested in the chapter that is headed "The Blight of the Baby Crop." The chapter starts out with the following:

"There are born in this country every year 2,500,000 babies. Of these, 300,000 die before they are one year old. The mortality of bottle-fed infants is ten to twenty times as great as those that are breast-fed. In other words, the failure of mothers to nurse their infants is responsible for the death of scores of thousands of infants annually. Every year we lose babies enough to people a large city because they are not supplied with their natural food, breast milk, for which cow's milk is by no means a complete substitute."

In Our Homes for June I mentioned Dr. Kellogg's statement that it takes 10 pounds of grain to make a pound of beefsteak; and Prof. Thorne said their experiments indicated that this is not far out of the way. Well, since then I have been wondering how many pounds of grain it takes to produce a dozen eggs, or, say, a pound of eggs. Dr. Kellogg says in this new book, "For every pound of food in the form of eggs we must throw away nearly 20 pounds of good food."

Now, our experiment stations have again and again figured out the cost of eggs; and ever since grain has been away up at present prices there has been complaint that the price of eggs has not gone up accordingly. Where one keeps just a few chickens and lets them run around the premises, and gives them the refuse from the table, there is no doubt that it is a money-making operation, or rather, a money-saving scheme. But where one starts an egg-farm and keeps laying hens by the hundred or thousand, I tell you he must figure close and be up to date or he will sink money. Every little while somebody writes me to know if he can not move down to Florida and get rich keeping chickens. When I say emphatically no, very often somebody suggests that he can *grow* his own chicken feed and not have to buy it. Yes, that is true; but, my dear friend, would not that same chicken feed that you grow, at least a part of it, sell in the market for more money than the eggs would bring? So far as green feed is concerned, this can be grown in Florida all winter; and down there the chickens seem to do well on a very large amount of green feed that takes the place of expensive grain.

I think it will pay you well to get this two-dollar book and read it carefully. There are quite a number of X-ray illustrations. Address Modern Medicine Publishing Co., Battle Creek, Mich.

Southern Beekeepers, Attention!

SAVE TEN PER CENT ON EARLY ORDERS

Root's goods at Root's prices, less 10 per cent for early orders. By Dec. first we expect to have our catalogs out and have the largest stock in the South. We pay the freight on the long haul from the factory here and sell to you at just what they will cost you at the factory.

We also manufacture an almost complete line of Supplies from Cypress, The Wood Eternal, which we guarantee to please you in every respect. We are right in the heart of the belt where this famous wood grows and so can make our prices cheaper. We have over a thousand colonies, all of which are in Cypress Hives, and haven't one fault to find with the wood for hive material. It will pay you to get our catalogs whether your wants are large or small, before ordering elsewhere. If you want a special or complete outfit, let us quote you on it.

The Penn Company, Penn, Miss.

Manufacturers and dealers in Beekeepers' Supplies; Breeders of Bees and Queens

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeier & Arpe Co., 139 Franklin St., New York.

FOR SALE.—Clover-amber blend honey at 25c. VanWyngarden Bros., Hebron, Ind.

FOR SALE.—350 lbs. wax, 2,400 lbs. water white clover extracted honey to the highest bidder. W. O. Hershey, Landisville, Pa.

RASPBERRY HONEY.—This honey has just enough buckwheat honey mixed with it to color it some. It is from one of the Hutchinson apiaries, and has all the fine qualities and flavor that the Hutchinson honey is noted for. It is put up for sale in 60-lb. cans. Price, 25c a lb. Sample by mail 20c which may be applied on purchase of honey.

John Hutchinson, Lake City, Mich., R. D. No. 2.

HONEY AND WAX WANTED

Small lots of off-grade honey for baking purposes. C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

WANTED.—Comb and extracted honey, car lots and less. Mail sample, quantity and price. W. Morris, Yonkers, N. Y.

FOR SALE.—5 tons clover honey in new 60-lb. cans at 25c per lb. f. o. b. Pembroke, N. Y. Voilmer & DeMuth

WANTED.—Comb and extracted honey, also beeswax. Send samples. C. S. Fryer, 386 Halsey St., Portland, Ore.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

WANTED.—White or light amber extracted honey in any quantity. Kindly send sample, tell how your honey is packed and your lowest cash price, also buy beeswax. E. B. Rosa, Monroe, Wisconsin.

WANTED.—Extracted honey, all kinds and grades for export purposes. Any quantity. Please send samples and quotations.

M. Betancourt, 59 Pearl St., New York City.

WANTED.—Extracted and comb honey. Carload or less quantities. Send particulars by mail and sample of extracted.

Hoffman & Hauck, Inc., Richmond Hill, N. Y.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

We are in the market for honey and beeswax. Send your best price on comb honey and a sample of extracted honey. State quantities you have, also style, size, and weight of package or section. Charles Israel Bros. Co., Inc., 486-490 Canal St., New York City.

WANTED.—Beeswax. We will pay for average quality beeswax delivered at Medina, 36c cash, 38c trade. We will pay 1 and 2c extra for choice yellow. Be sure your shipment bears your name and address as shipper so we can identify it on arrival.

The A. I. Root Co., Medina, Ohio.

FOR SALE

HONEY LABELS.—Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Conn.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

SEND TODAY for samples of latest honey labels. Liberty Pub. Co., Sta. D. Box 4E, Cleveland, Ohio.

FOR SALE.—Hand-gathered sweet clover seed now ready. Write for prices. E. C. Bird, Boulder, Colo.

FOR SALE.—One Dadant's uncapping can, good as new, \$7.00; 50 cases 60-lb. cans, used once, \$20. Mason, Mechanic Falls, Me.

FOR SALE.—Good second-hand 60-lb. cans, two to the case at 50 cents per case in lots of 50; will exchange for honey. E. B. Rosa, Monroe, Wis.

FOR SALE.—80 good second-hand 5-gal. cans at 65c per case of two cans. John Kneser, Hales Corners, Wis., R. F. D. No. 1.

Beeswax worked into comb foundation at money-saving prices. Satisfactory work guaranteed. Send for terms. E. S. Robinson, Mayville, N. Y.

Pennsylvania Distributors for Root Bee Supplies, save time and transportation expense on all standard hives, sections, etc., at catalog prices. Prothero, Bailey & Goodwin, Dubois, Pa.

FOR SALE.—Good second-hand 60-lb. cans, two to the case, at 60c per case f. o. b. Cincinnati. Terms, cash with order. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, Ohio.

CANADIAN BEE SUPPLY & HONEY CO., Ltd.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—You can make your own comb foundation and earn big money making it for others. New, easy, rapid process. Machine and all apparatus complete with full instructions, \$100. Wax worked on shares or for cash. J. J. Angus, Grand Haven, Mich.

WANTS AND EXCHANGE

WANTED.—Second-hand honey extractor. E. L. Gardiner, 44 Otis St., Murtonville, Mass.

WANTED.—To purchase hand extractor and steam uncapping outfit. N. A. Clay, Oberlin, Ohio.

WANTED.—Colonies of bees in lots of anywhere from 5 to 500. State lowest cash price wanted. H. G. Quirin, Bellevue, Ohio.

WANTED.—1,200 lbs. light extracted honey. Send sample and state price. Edw. M. Klein, Waukegan, R. D. No. 1, Ills.

WANTED.—Bees and equipment for good four-room house and lot in Topeka, Kans. A. V. Small, Box No. 218, Augusta, Kans.

WANTED.—5 to 50 strong colonies of Italian bees in 10-frame dovetailed hives. Evan Jones, Franklinville, N. J., Box 94.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

Good 250-egg capacity incubator, only been used for one setting; 1 Spanish jack; 1 Jennet colt; 2 Spanish Jennetts. Would exchange for bees.

C. C. Combs, Gum Neck, N. C.

SPOT CASH.—For bees in good condition in 8- or 10-frame Langstroth hives located in So. Calif. Write A. E. Lusher, 945 Kirkwood Ave., Pasadena, Cal.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

REAL ESTATE

50 acres unimproved property, good timber, quarter part large baywood (Magnolia) Louisiana, ½ mile from railway station. Good tee pasture. \$500 cash. Paul Gaertner, Rocky Point, R. F. D., N. C.

BEAUTIFUL HOME FARM. improved rich soil, well located; good buildings, 100 colonies of bees, up to date; best honey-producing location in the State; not crowded; average for past 7 years, 105 lbs., 5 acres of ginseng and goldenseal, all ages, in fine shape; half artificial shade, half natural. Will sell a part or all of seng-seal. 80-acre farm, \$80.00 per acre; \$7,000 for farm and bees, 150 extracting supers and combs, 150 shallow supers, 2-frame extractor, 2 large honey tanks. Terms, \$3,000 cash, balance time. A wonderful opportunity—a bargain. Reason for selling, poor health.

W. M. Penrod, Ronneby, Minn.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, R. D. No. 3, Vincennes, Ind.

Hardy Italian queens.

W. G. Lauver, Middletown, Pa., R. D. No. 3.

FOR SALE.—Three-hand Italian queens.

W. T. Perdue, R. D. No. 1, Ft. Deposit, Ala.

No more queens this season. Root's beekeepers' supplies. A. W. Yates, Hartford, Conn.

Well-bred bees and queens. Hives and supplies.

J. H. M. Cook, 84 Courtland St., New York.

Golden Italian queens, untested, \$1.00 each, six for \$5.00. E. A. Simmons, Greenville, Ala.

WANTED.—Bees in the far south where there is early honey flow. Heard & Ellison, Kinde, Mich.

"SHE SUIT ME" Italian queens; \$1.00 from May 15th to Oct. 15th.

Allan Latham, Norwichtown, Conn.

Three band Italian queens, untested, \$1.00; select untested, \$1.25; tested, \$1.50; select tested, \$2.25. H. W. Fulmer, Box G, Point Pleasant, Pa.

FOR SALE.—Three-banded Italian queens, safe arrival guaranteed. Write for prices. J. A. Jones & Son, Hope Hull, Montgomery Co., Ala.

THREE-BAND ITALIANS ONLY. Untested queens, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50. H. G. Dunn, The Willows, San Jose, Calif.

GOLDENS THAT ARE TRUE TO NAME. Untested queens, each, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50.

Garden City Apiaries, San Jose, Calif.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey gatherers as can be found; each \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

J. B. Brockwell, Barnetts, Va.

Good queen-breeder wanted for 1919. State experience and salary expected, for position in village. Good school, churches, etc. Man exempt from military service preferred.

W. D. Achord, Fitzpatrick, Ala.

Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolans. Tested, \$1.00 each; untested 75 cts. each. Bees per lb., \$1.50; nuclei, per frame, \$1.50. Send your order for bees early.

C. B. Bankston & Co., Buffalo, Leon Co., Tex.

BEES FOR SALE.—50 colonies Italians, 10-fr., either section or extracting supers; winter stores; no disease. \$300 cash on ground. Extra supplies, hives and extracting outfit, \$100.

R. O. Dickson, Robinson, Ills.

FOR SALE.—During 26 years of active beekeeping and during the last 10 years have operated not less than 1,400 colonies of bees, and during all of that time have SOLD ONLY 28 COLONIES. I am now going to offer about one-half of my holdings or 800 colonies for sale, in fine condition, with full equipment. This offering is an independent plant and a good money-maker for one who is a business man and understands bees—a proposition I can show without hesitancy of opening any hive to any one. A partial payment and proper security will be acceptable, with reasonable time for the balance.

J. W. George, El Centro, Box. No. 62, Calif.

FOR SALE.—60 colonies of three-band Italian bees in sound standard 10-frame hives, Hoffman frame, guaranteed to be free from disease, one story complete, \$7.00 per colony. On account of selling bees by the pound we have a big stock of 10-frame second-hand hives all the standard size, with Hoffman frames in hives and supers, some 700. One-story dovetailed hives with frames, cover and bottom. \$1.25 each; bodies with frames 65c each; Ideal supers with frames 40c each. Some 300 homemade, same material halved at corners and nailed both ways, just as good as the dovetailed but do not look so well, complete hive, \$1.00 each, supers 30c each, bodies with frames 55c each. All hives are painted white. We also offer new nucleus and shipping cages all nailed up ready for use as follows: 28 3-frame nucleus, 30c each; 57 2-frame nucleus, 25c each; 28 3-pound cages, 40c each; 148 2-pound cages, 30c each; 150 1-pound cages, 25c each.

Hyde Bee Co., Floresville, Tex.

CERTAINLY A BARGAIN

We have in stock at Medina one Root Improved Wax Press that has become shop worn, and the plunger is somewhat rusted, but the press will give just as good service as a new one. To clear this from stock we offer it at the very low figure of \$10.00 cash with order. A new press would cost you \$25.00.

A. I. ROOT CO., Medina, Ohio.

Special Notice by A. I. Root

OFF TO FLORIDA AS SOON AS OHIO VOTES DRY.

First and foremost, if you are a voter, for heaven's sake, and for the sake of unborn generations, "get busy," and be sure your vote goes in on the right side. And even tho (I am sorry to say) the good mothers and wives can not vote *just yet*, they can wield a mighty influence if they choose; so, all of you just get busy when you see this printed page. Mrs. Root and I are planning to start on election day, after my vote is in; and when I am down in my Florida home in Bradentown write me just as many letters as you choose, and just as long; but if you want an answer please do inclose an addressed postal card. I think I can manage to give you each and all prompt answers if you will not ask me to answer more than I can easily crowd on a postal. Of course I am happy over the brilliant prospects now opening up day by day, not only for a dry Ohio but for temperance, "peace, and good will" thruout the whole wide world.

Your old friend,

Oct. 18, 1918.

A. I. Root.

BEEKEEPERS' SUPPLIES

A Good Stock of the

Lewis Beeware

and

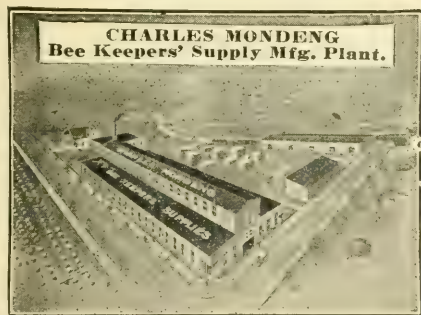
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factory prices.

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We have a market for your honey and
beeswax.

BEE SUPPLIES AT WHOLESALE



All boxed ready to ship at once; 275,000 Hoffman frames, also Jumbo and Shallow frames, of all kinds, 100 and 200 in a box. Big stock of Sections, and fine polished Dovetailed Hives and Supers. Send for a price-list. I can save you money.

Will Take Beeswax in Trade at
Highest Market Price.

Charles Mondeng

146 Newton Ave., N. Minneapolis, Minn.

Our Food Page—Continued from page 670.

flour, baking powder, and salt together, cut in the shortening and add enough milk to make a drop batter. Drop by spoonful over the apples and bake in a moderate oven about 40 minutes. If the apples are not of the quick cooking sort, it is well to cover them and bake them until partially done before adding the crust. Barley flour may be used instead of the rice flour. Eat with butter and honey or the following sauce.

HONEY SAUCE.

2 tablespoons butter	1 cup honey
2 tablespoons corn-starch	$\frac{3}{4}$ cup water
	$\frac{1}{2}$ teaspoon salt

Melt the butter and blend with the corn-starch, add the honey and water, and cook in double boiler until it thickens.

POTATO ROLLS.

(Adapted from recipe in Oct. *Delicater*.)

1 cup mashed potatoes	1 teaspoon salt
1 cup sweet milk	1 cake compressed yeast
4 tablespoons shortening	2 tablespoons warm water
1 or 2 eggs	2 tablespoons honey, if desired
About 4 cups bread flour	

Beat the egg in a bowl, add the milk, which should be scalded and cooled to lukewarm, the yeast dissolved in the warm water, the salt, mashed potatoes, enough of the flour to make a batter (2 cups), and the shortening (melted). Beat thoroughly, cover and put in a warm place to rise. When light, add the rest of the flour, which should be enough to make a dough, knead until smooth and elastic and let rise again. When it has doubled in bulk, roll out about half an inch thick, cut with a biscuit cutter, brush with melted butter, fold over and place in an oiled pan to rise again. When light bake in a quick oven 15 to 20 minutes. Rolled oats or any of the substitute flours may be used instead of 1 cup of the wheat flour.

All measurements level. Flour sifted once before measuring.



BOOKS AND BULLETINS

AGRICULTURAL GEOGRAPHY.

The U. S. Department of Agriculture at Washington has recently issued an atlas of agriculture, prepared by Prof. V. C. Finch of the University of Wisconsin and O. E. Baker of the Office of Farm Management. This atlas contains much information of interest to every one engaged in agriculture, but we wish to call attention to a few of the subjects treated which apply especially to beekeeping. The various sources of food supply are treated separately.

Alfalfa.—With the map showing the alfalfa acreage is the following statement concerning the distribution of this valuable forage crop—valuable as forage for bees as well as for larger animals. "Alfalfa is a crop whose distribution is limited both by soil conditions and by climate. It demands soils that are not acid, and its culture is most profitable in a climate that is not rainy during the summer. Consequently it thrives best in the Western States, and fairly well in the limestone regions in the East,

(Continued on page 697.)

Worth More to Family Life To-day Than Ever Before

The Youth's Companion

Now is the time when Families reach out after genuine character-making reading. Help, cheer and inspiration are in demand. The Companion deals with the fundamentals, and its great quantity and diversity and economy make it "appeal to these times."

Great abundance of the very best, from every worth-while source, in wonderful variety and in weekly installments. Supplies all ages. Serials, Short Stories, Articles, Receipts, Puzzles, Sports, Games, Money-Saving Suggestions, Home Efficiency and Economy, etc. **A greater help to the Family—A greater Bargain in reading than ever—52 Times a Year.**

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These Len-Mort Work and Outdoor Shoes are such wonderful value that we will gladly send them to you at once, no money down. You will find them so well-made and so stylish and such a big money saving bargain that you will surely keep them. No need to pay higher prices when you can buy direct from us. Why pay \$5 and \$6 for shoes not near so good?

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This shoe is built to meet the demand of an outdoor city workers' shoe as well as for the modern farmer. Built on stylish lace Blucher last. Special tanning process makes the leather proof against the acid in milk, manure, soil, gasoline, etc. They outwear three ordinary pairs of shoes. Very flexible, soft and easy on the feet. Made by a special process which leaves all the "life" in the leather and gives it a wonderful wear-resisting quality. Double leather soles and heels. Dirt and water-proof tongue. Heavy chrome leather tops. Just slip them on and see if they are not the most comfortable, easiest, most wonderful shoes you ever wore. **\$3.85** for shoes on arrival. If, after Pay only careful examination you don't find them all you expect, send them back and we will return your money. Order by No. X15012.

SEND your name and address, and be sure to state size you want. You be the judge of quality, style and value. Keep them only if satisfactory in every way. Be sure to give size and width.

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Books and Bulletins—Continued

where its culture is increasing rapidly. This increase is retarded, however, by the fact that the first cutting of alfalfa commonly conflicts with corn cultivation. About one-half of the alfalfa of the United States is grown under irrigation, and less than six per cent of the acreage in 1909 was east of the Missouri River. It is raised quite extensively in the Black Prairie of Alabama and Mississippi, however, where the annual rainfall is 50 inches, and is being grown in Saskatchewan upon a rainfall of less than 15 inches. Its deep roots enable it to endure drought much better than does clover. Including the various varieties, alfalfa grows under almost as great variations of temperature as any other cultivated plant, its range extending from the intense heat of the Imperial Valley of California to the cool climate of northern Montana and Saskatchewan. It thrives best, however, and produces the most cuttings per season in the warmer Southwestern States." A glance at the map shows that the San Joaquin, Sacramento, and Imperial Valleys of California, the Snake Valley of Idaho, the Salt Lake Valley of Utah, the Big Horn Basin of Wyoming, the region north of Denver, the western slope, and the Arkansas Valley of Colorado are all heavy producers of alfalfa, and these are the regions from which most of the alfalfa honey comes. The enormous region of alfalfa growing in Kansas and Nebraska has not as yet yielded much honey to the general market, but there is every reason to expect that beekeeping will be greatly increased in these States in the near future. Alfalfa does not secrete nectar to any extent east of the Missouri River, so the fact that it is not grown much in this region is not a matter for the beekeeper to lose sleep about. In the intermountain country of Colorado, Utah, Wyoming, and Idaho the honey from alfalfa is white, while that from Arizona, New Mexico, and the valleys of California is amber. Some day the beekeepers will appreciate the room for development of beekeeping in some of the alfalfa regions where the industry is as yet undeveloped, and then there will be more of this delicious honey on the market.

Beans.—Where these vegetables are grown extensively they furnish nectar for the bees, altho all varieties are reported to be not equally good. The main bean regions are shown to be in California, Michigan, and New York. Recently there has been a great increase in bean growing in Colorado and other Western States.

Buckwheat.—The map presented herewith shows the buckwheat region. This plant is probably native to China, and in the United States two-thirds of the entire acreage is in New York and Pennsylvania. The plant is grown as far west as Minnesota, and is also found south in the mountain region. Very little buckwheat is grown where the mean summer temperature is over 70 degrees, and practically none where it exceeds 75 degrees. Buckwheat will give profitable yields on soils too poor to produce most other crops. It is grown largely on poor soil or as a catch crop after another crop has failed, since it may be sown as late as July 1 and still mature before frost in the northernmost States. Thruout the entire buckwheat region European foul brood is prevalent, resulting in a considerable reduction of the buckwheat-honey crop. The honey is the darkest that is put on the market, but those who have eaten it in their childhood days think that there is no honey as good. The flavor is strong.

Clover.—In the discussion of hay and forage there are some interesting facts brought out which have a great influence on the honey situation in the clover region. It is shown that the leading variety of hay is timothy and clover mixed in the States of New York, Pennsylvania, Michigan, Wisconsin,

(Continued on page 699.)

YOU WILL BE PROUD OF THIS COLLECTION

"Home Fruit Collection"

Is sold only with a 1 or 3-Year Subscription

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|-----------------------|-------------------------------|
| 1 Delicious Apple | 1 Moore Early Grape |
| 1 Early Elberta Peach | 3 Mersereau Blackberry Plants |

Amer. Fruit Grower, 3 yrs.. \$1.00	Amer. Fruit Grower, 1 yr. \$.50
Home Fruit Collection .50	Home Fruit Collection .50

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CAN YOU BEAT IT?

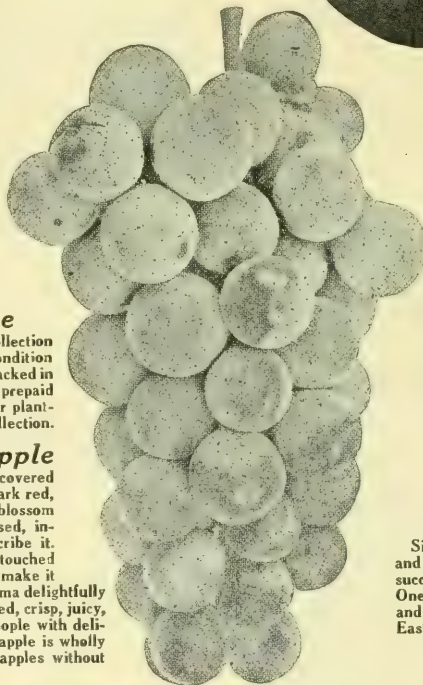
It really sounds like a fairy-tale, but, nevertheless, we will send this "Home Fruit Collection" to anyone subscribing to the American Fruit Grower for three years for \$1.50, or a one-year subscription including "Home Fruit Collection" for \$1.00. Just think how great it would be to have this fine selection growing in your yard. In a few years you would obtain enough fruit to meet your own wants and also have some to can for the winter.

Our Guarantee

We positively guarantee this collection to be in a hardy and healthy condition when received by you. They are packed in heavy cartons and sent to you by prepaid parcel post. Full instructions for planting and care sent with each collection.

One Delicious Apple

Is large, the surface almost covered with a most beautiful, brilliant dark red, blending to golden yellow at the blossom end. In quality it is unsurpassed, incomparable—words cannot describe it. In flavor it is sweet, slightly touched with acid, but only enough so to make it all the more pleasing, with an aroma delightfully fragrant. The flesh is fine-grained, crisp, juicy, melting and withal delicious. People with delicate digestion to whom an acid apple is wholly indigestible, can enjoy Delicious apples without disagreeable after-results.

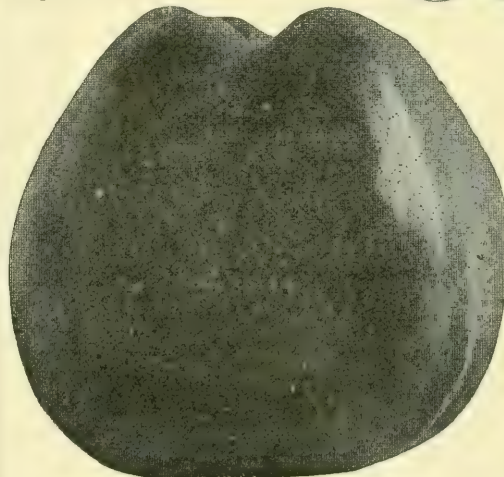


One Early Elberta Peach

Is the yellow peach of the century. The huge golden globes of fruit that it bears in such astonishing abundance are now famous wherever peaches are grown. The Early Elberta is a beautiful golden yellow, blending into a glorious red on the sunny side; a strong, protecting skin, covering a luscious flesh that is flavored with a juice as sweet as nectar. It allures with its beauty, gratifies with its quality.

One Moore Early Grape

Similar to Concord in appearance and quality; vine healthy and hardy, succeeding wherever Concord grows. One of the most profitable varieties, and is planted largely in all sections East, West, North and South.



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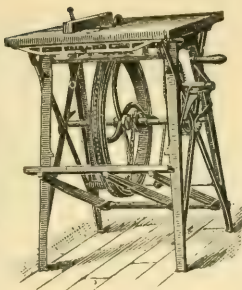
BARNES' Hand and Foot Power Machinery

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

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W. F. & JOHN BARNES CO
545 Ruby St
ROCKFORD, ILLINOIS



Books and Bulletins Continued

Iowa, and western Missouri, the New England States, and the mountain region of the South to Tennessee; while in Ohio, Indiana, Illinois, and eastern Missouri the chief hay crop is timothy without the clover. It is well known that the last named States are much less valuable as clover-honey States than the States in the first named group. Clover is evidently influenced markedly by climate. It extends into central Tennessee, but there the climate is practically the same in summer as that of New York State. Clover is also found in Montana, Washington, and northern California, and there are some fine locations for clover honey along the Mississippi River. In the discussion in the atlas there is no mention of white clover alone, but we know that where clover grows, the white clover and alsike are found. On page 120 there is a map presenting to view the dairy industry as shown by the receipts from sales. This map might well serve as a map of the commercial beekeeping industry in the United States. Dairying in the West is, of course, dependent on alfalfa, but it, too, is great for beekeeping. If the beekeepers unite with specialist farmers of any other class, it ought to be with the dairymen.

Sugar.—The discussion of sugar in this atlas shows very clearly why there is a shortage of sugar among the allies. The United States produces 5 per cent of the world's sugar supply, Cuba 14 per cent, Porto Rico 2 per cent, and the Hawaiian Islands 3 per cent. On the other hand, Germany produces 13 per cent, Russia 9 per cent, Austria-Hungary 9 per cent, India 14 per cent, Java 8 per cent, all of which we can not get, either because it is on the other side of No Man's Land or because we cannot spare ships to get it. Northern France normally produces plenty of sugar, but this industry has suffered because of the unwelcome visitor. The United States, Canada, and the United Kingdom all use over 80 pounds of sugar per capita when it is available; France and the Central Empires use from 40 to 50 pounds per capita; while Russians and the people of India get on with about 20 pounds each. There would be plenty of sugar for all of us in the United States this year, were it not for the fact that we are sharing what we have with the European nations that are fighting with us. We need some to feed our bees, and we cannot well use anything else for them, but if need be we will send all the rest to Europe, if it will do any good in fighting the war. The total production of sugar for the entire world is given as 16,806,000 long tons, while the total population is less than two billions. That indicates that human beings use a great deal of sugar. It is significant that there are presented in this atlas no statistics for honey production. This, we may assume, is not from neglect, for there are no available figures for the honey production of the world. Since sugar production increased with the introduction of trade with the tropics, honey has had to take a back seat; but every new fact about the food value of honey that is brought out by investigations shows that we have made a serious mistake in decreasing our consumption of honey and in so greatly increasing the use of cane and beet sugar. Perhaps the war will teach us a lesson in this regard, if we cannot get all the sugar that we might wish. At any rate, the people of the United States will be far better off, if they will increase their use of honey—and it is the beekeeper's business to see that they do. The beekeepers of the United States will make a great increase in the food supply of the nation, if the season is favorable. They will do it because it will pay them to produce more honey, but there is a bigger reason back of it. The chief reason is that this is the best way that the beekeepers can help to win the war.

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Institution**

The money will reach us safely BY MAIL and you can thus build up your surplus account at interest, conveniently and with no trouble to yourself.

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Prompt service and no trucking bills.

THE A. I. ROOT CO., Mechanic Falls, Maine
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"Best" Hand Lantern



A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog.

THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

Queens BEES BY PARCEL POST Queens AND WE PAY THE POSTAGE

Will ship Italian Bees this year from our own yards. They are hustlers. A few pounds of Honey next year at 25 to 30c per pound will pay for your packages of bees. We shipped thousands of pounds last season.

We are booking orders now, one-fourth down, balance at shipping time. We are going to winter 1000 Young Tested Queens reared in October so can ship Tested Queens early as you want them.

One 1 pound package of bees.....\$2.90	Select Untested Queens.....\$1.50 each
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10 per cent discount on orders amounting to 25 packages or more. Add price of Queen wanted when ordering packages of bees. Breeders \$5.00 and \$10.00.

Send for Free Circular giving details. Reference: The Guaranty State Bank, Robstown, Texas, and The City National Bank, Corpus Christi, Texas.

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TEN PER CENT EARLY ORDER CASH DISCOUNT

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PLACE YOUR ORDER NOW

for the goods wanted this winter. Exact prices quoted on the list of goods you want. Honey and beeswax taken in exchange for bee supplies.

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LANSING, MICH.

BEES Tested Italian Queens, \$1.50

We furnish full colonies of bees in single-walled and double-walled hives. Nucleus colonies and bees by the pound. Write for what you need.

I. J. Stringham . . Glen Cove, N. Y.

Complete Line of

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Catalog on Request

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The BEST LIGHT

Positively the cheapest and strongest light on earth. Used in every country on the globe. Makes and burns its own gas. Casts no shadows. Clean and odorless. Absolutely safe. Over 200 styles. 100 to 2000 Candle Power. Fully Guaranteed. Write for catalog. AGENTS WANTED EVERYWHERE.

THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

Does It Pay?

The ad. I put in the September GLEANINGS calling for a few good colonies of bees brought me great results, saving me at least \$5.00 per colony.

Howard E. Harriman
Prospect, Me., Sept. 20, 1918.

AROUND THE OFFICE

M.-A.-O.

W. A. Gridley of Los Molinos, Calif., wrote this here on Sept. 18: "Gleanings satisfies me, but I wish you could shake more out of Mel Pritchard. Ain't he a lazy old cuss? I wish he enjoyed writing as much as I enjoy his articles." Then on Oct. 4, after Gridley has got his October Gleanings, he up and writes this: "Thanks to M.-A.-O. for Mr. Pritchard's photo, page 636, last Gleanings. It is the best thing M.-A.-O. has ever turned out. Mr. P. is a nice looker. Wish he would write more for us. He never wastes printers' ink, but always gives us facts that are proved. I have accused him of being a lazy old cuss. That was before seeing his picture. I think now it is due to lack of confidence. I will apologize to him when we meet." That's what Gridley wrote exactly, that cuss word cuss and all, just so. I have got my opinion of any one indulging in such language, so I have, and Dr. Miller says he has. I want the language reformers who saved me, to get right after peelin' Gridley and skin him alive, so I do, by Sulphide. But I have a little somethin' myself to say to Mr. Gridley. He says Mel Pritchard's photo is the best thing M.-A.-O. has ever turned out. Is Mel's picher the best thing I ever done? Well, then either Mel ought to be very proud of himself or I oughter retire away in the rear sine di. And I want to know how Gridley by just lookin' at Mel's picher knows he ain't a lazy old cuss but is lackin' in self confidence? Is that so? Has Gridley ever saw Mel pick a skunk up by the tail, or seen him tie into Editor E. R. Root on some bee-keepin' question? I aint never seen any lack of confidence on such occasions as them, so I aint. Why, I see him a smokin' one day so near to Mr. A. I. Root that "Uncle Amos" was almost lost in the smoke screen

Cans and Shipping-cases

We have a fine stock of 5-gal. cans and shipping-cases; also comb foundation, extractors, honey-tanks, etc.



Quick Shipments.

KRETCHMER MFG. CO.

Dept. G, Council Bluffs, Iowa

Around the Office - Continued

Mel was a puttin down, and when Mr. A. I. up and says, "Why, Mel, do you smoke?" Mel says right back, "Not any more than just what I am doin now. Why don't you?" If that ain't what you call confidence, its somethin close resemblin to nerve. No, sir, Mr. Gridley, Mel aint a lackin in nerve. He'll tackle a skunk or the Root crowd any time. Your first guess was right. He's a lazy old cuss when it comes to writin.

* * *

The picher of our Editor published in this department this time was handed me by one of his nearest relatives. It wont his wife tho. He was in swimmin at the time. Anybody who aint seen him lately wouldnt a known he had grown so fat. He looks some-



Editor E. R. Root, from his latest photo, thing like a hippotamous here. He was claimin to be floatin and showin how to do it when the camera caught him, but if I know anythin about floatin he aint doin it. He's perched on a sand bar and his head and feet are all that's floatin,—he's just curvin one over on his lady admirers linin the

New England Beekeepers

will find a complete line of supplies here. Order early and avoid delays. Write for catalog.

H. H. JEPSON

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COMB HONEY SHIPPING-CASES

Our shipping-cases are all accurately made of nice basswood lumber. This makes a very attractive, neat, and strong package.

Send for our catalog.

August Lotz Company, Boyd, Wisconsin

Don't Lose Any More Wax

Beekeepers: Let us print you some cloth or manilla tags to go on your shipments of wax with your name and address. That is the only safe way to be sure your wax isn't lost in transit.

Pices on Application.

The A. I. Root Co., Medina, Ohio

THE USEFUL THREE

Due to Government regulation of subscription terms, we have to advance this triple combination from \$1.25 to

Gleanings in Bee Culture	} One Year \$1.50
Green's American Fruit Grower	
American Poultry Advocate	

ADDRESS

Gleanings in Bee Culture, Medina, O.

Full Values in "falcon" Beekeepers' Supplies

For the last forty yéars during our manufacture of "FALCON" supplies it has been our endeavor to place upon the market the best possible line of supplies. And we pride ourselves in having accomplished this. "FALCON" supplies have not only been recognized as the best in this country, but also a leader in other countries. Nothing expresses the superiority of the "FALCON" ware better than the many kind and pleasing words we receive from our satisfied customers, and the ever-increasing demand for "FALCON" supplies.

The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid

Dealers Everywhere

"Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from

shore. But why did he stiek his feet up so? Are they anythin to be proud of? And does a hat and glasses generally accompany a gent what is floatin sure? Iony Fowls says if I dare publish this picher I just better go home from the office for a few nights on some other street than where his wife lives on. I had thought of that too, and I am goin to do it.

* * *

Here's a feller I like and I'll bet he's honest. He's F. N. Westgate of Portage la Prairie, Man. He wrote one of the Roots the other day sayin': "I am troubled with shorts, as they say here. Money is the scarest thing you ever saw with me just now." That's me too all over. I'll bet Westgate's a fisherman and tends to it, too.

* * *

Mr. W. C. Young of Chicago writes the Roots about receivin one of their books and ends up by sayin: "I certainly enjoy it when nothing else can please me." Mr. Young, is your wife livin?

* * *

J. L. Byer now comes along in a letter to me personal sayin he invited me fishin oncet and that was a standin invitation and that was enough. It might a been enough for ordinary people runnin in ordinary luck. But I don't ever know how I am standin with people the next day. I aint generally steadily liked by nobody. I have to make

sure new every mornin that my own old coon houn, who I've fed lovinly for a dozen years, wont bite me that day. Why would I expect a invitation then to hold good till I could get to Canady? I couldn't. But why should Byer go on in his letter to me tellin what great fishin they've been havin up there this fall, and end up by sayin, "but the fishin's over for this year?" Is that the regulation endin of a standin invitation to come a fishin? Next year there won't be no dodgin me, Byer. You needn't write me next April or May that the fishin's over for next year, so you neednt. I'm comin, any way.

* * *

I see that in this here number of Gleanings, Dr. Miller says he see Mel Pritchard's picher in October Gleanings. If he did, he had to see it in among my own writins, and I don't see how so awful good a man as he is pollutes hisself that a way. He says he's got his opinyon of me—he said it just that a way, as was meaner'n so he had printed that opinyon in full right out. By the way, that old sage out at Marengo can say more, too, without sayin it at all than most ink spreaders can say in a whole colum. But without commentin more on him at this time, what I want to say is that if he goes snoopin around in this here Around the Office department he oughter take what he finds and not kick about it, so he had. I sort o like Dr. Miller too despite what he said about me.

Protect Your Bees

THE best and safest way of protecting your bees from the cold, saving all their energy for honey-making, is by using "Hivofelt." After five years on the market, "Hivofelt" has thousands of satisfied users and is recommended by State Universities and the United States Department of Agriculture.

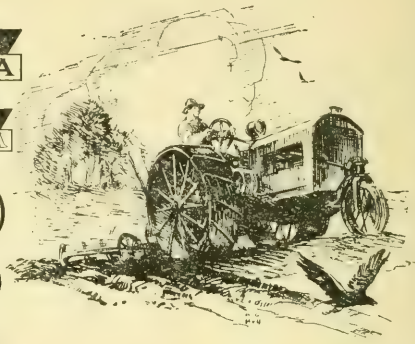
"Hivofelt" is a mat made of flax fibre, thoroughly degummed and pressed into a uniform thickness of 3-4 of an inch, avoiding the clumsiness of the usual insulator and providing greater protective value.

Write today for a free sample, or better still, send us 25 cents and we will send you a piece large enough to cover a hive, so that you may give it a practical trial. Now that winter is coming, you cannot afford to leave your bees unprotected. Write at once.

Minnesota Bee Supply Company

20 Power Bldg., Nicollet Island, Minneapolis, Minn.

We pay top prices and spot cash for
honey and beeswax



Over there Over here

THROUGH mud and rain, through gas and shrapnel, our boys are pushing on to Victory. It's a task that tries the souls of strong men. They *must* have rest and recreation.

At the canteens, they buy the little comforts of life at cost. In the war-service huts, they find everything needful to write the letters you receive. They attend a show, see a "movie" or hear good music—all free. Always, they find in the hut secretary a friend. They forget for a little while the grim scenes of war and return to duty refreshed. These are some of the things that keep fighting men at top notch.

YOURS is the task of growing the food these fighting men must have. The toiling millions in the munition factories, arsenals and shipyards also look to you for sustenance. And they do not look in vain.

Your work is vital to winning the war and you are doing it manfully, mindful of Country, forgetful of self. You are working early and late, putting forth your strength unsparingly. You have produced bounteous crops that feed a hungry world. Yet to you are spared the comforts of home and the presence of loved ones. Yours are the privileges of earning and giving.

Give to "keep good men good and brave men strong."
Give to bring cheer to those who are daring their all for you and yours. And when the boys come home victorious, you can honestly say, "I have done my part, too. I have backed you to the limit."

Seven Allied Activities, all endorsed by the Government, are combined in the United War Work Campaign, with the budgets distributed as follows: Y. M. C. A., \$100,000,000; Y. W. C. A., \$15,000,000; National Catholic War Council (including work of the Knights of Columbus and special war activities for women), \$30,000,000; Jewish Welfare Board, \$3,500,000; American Library Association, \$3,500,000; War Camp Community Service, \$15,000,000; Salvation Army, \$3,500,000.

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PRODUCERS of section honey should lay in their supply of sections before December 1st in order to take advantage of the 10 per cent early order cash discount for orders received prior to that date. ¶ The fact that the British Government awarded us the contract for three million sections in February, 1918, should be sufficient proof of the high quality of our sections. And yet the price is no higher than for those of other makes. Regular size sections stocked at all our branches.

*Write today for prices and
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You Can Help Win the War

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Ordering Your Supplies Now

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ordering standard goods so as
to enable manufacturing plants
to increase production

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wintering your bees with care-
ful attention to their comfort
and safety

Get busy now and make up a list of your requirements
---a big discount is offered for early orders---take advantage of prevailing transportation conditions, later on it may be more difficult to secure prompt shipment. Remember, every pound of honey produced will release its equivalent of butter or sugar for other purposes of food.

INCREASE YOUR HONEY PRODUCTION
THE ITALIANS ARE OUR ALLIES

G. B. Lewis
Company



Watertown,
Wis.

Order from your nearest distributor.

Gleanings ⁱⁿ Bee Culture



"Of all the good days in the year,
Christmas Day, with homeward
hopes belonging to it; Christmas
time---a kind, forgiving, charitable
time." --- *From Dickens' Christmas
Carol.*

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you spot cash for anything you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.

633 Central Bldg., Sixth and Main Sts.

Los Angeles, California

Telephones: Home 10419; Main 5606

LEUTZINGER & LANE

Wholesale Dealers and Shippers of

EXTRACTED AND COMB HONEY

CORNER DRUMM AND OREGON STREETS
SAN FRANCISCO, CALIFORNIA

WESTERN BEEKEEPERS ATTENTION!!

We pay spot cash for Honey and do not handle on Commission. Write us what you have or expect to have to sell, we buy any quantity. ❖ ❖ ❖

Beeswax Wanted

In big and small shipments, to keep Buck's Weed-process foundation factory going. We have greatly increased the capacity of our plant for 1918. We are paying higher prices than ever for wax. . . We work wax for cash or on shares.

Root's Bee-supplies

Big stock, wholesale and retail. . . Big catalog free.

Carl F. Buck

The Comb-foundation Specialist

Augusta, Kansas

Established 1899

"Griggs Saves You Freight"

TOLEDO

BEE SUPPLIES FOR NEXT SEASON'S USE

Have you placed your order yet for supplies for next season's use? If not, let us caution you to do so as promptly as possible. Owing to the Government regulations on lumber, bee supplies may be hard to get next spring when you want them. Remember the early discounts before December 1, are worth taking advantage of. Send us a list of the goods you will need and we will send you our discounts on the same.

HONEY - HONEY - HONEY

We are always in the market for comb or extracted honey at all times. Let us hear from you as to what you have to offer, mailing a sample of the extracted.

Better exchange your honey for supplies.
BEESWAX either in cash or trade.

S. J. GRIGGS & CO.,

Dept. No. 25

Toledo, Ohio

"Griggs Saves You Freight"



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THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

Editorial Staff

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Editor

A. I. ROOT
Editor Home Dept.

IONA FOWLS
Assistant Editor

H. G. ROWE
Managing Editor

READY MONEY FOR YOUR HONEY!!

SHIP NOW. If you have honey for sale, we want to buy it. Ten thousand producers in all parts of the world witness to the reliability of this house. No purchase too large or too small. We handle many carloads a year. Send us a sample and name your most reasonable price. We buy every time your price justifies.

PROMPT REMITTANCE. Remittance sent by return mail for every shipment we receive.

Honesty and integrity during the many years in the honey business have won for us the good will and confidence of thousands.

OLD COMBS AND CAPPINGS. Send them to us for rendering. We pay you the highest market price for beeswax, and charge you but 5c per pound for the wax rendered. It pays to send us your old combs and cappings.

WANTED, COMB HONEY. Comb and extracted Honey find ready sales here. Tell us what you have. We buy beeswax at high prices. Always glad to reply to inquiries.

WE SELL LEWIS BEEWARE. "Lewis," stands for the highest quality Beeware known. Safe and reliable, "Made like furniture." We are glad to fulfill your needs.

Our New Home

We are now located at Pearl and Walnut Streets, and are in the largest Honey House in the country. When you are in Cincinnati don't forget to call on us, for it will be a pleasure for us to show you our wonderful new home.

**DADANT'S FAM-
OUS FOUNDATION**

**ROOT'S SMOKERS
AND EXTRACTORS**

SEND FOR OUR 1918 BEE CATALOG

THE FRED W. MUTH CO.

PEARL & WALNUT STS.

CINCINNATI, OHIO

WANTED---50 TONS BEESWAX

The growing demand for

Superior Foundation

Requires increased production

“ Best by Test ”

Manufactured by

SUPERIOR HONEY CO.

OGDEN, UTAH

HONEY WANTED

We are in the market at all times for unlimited quantities of honey, both comb and extracted. Before selling your crop let us hear from you, quoting your lowest price, either f. o. b. your station or delivered Cincinnati. - If extracted, mail sample, state how it is put up; if comb, state grade and how packed.

C. H. W. WEBER & COMPANY
CINCINNATI, OHIO

HONEY MARKETS

The great war is over—at least, the fighting is over—and the price of honey has not declined. The market is a shade weaker to this degree, that holders of honey in some quarters are showing nervousness and are disposed to put their honey on the market at once. Big buyers have had decidedly more offerings since the armistice was signed than before, altho not at any appreciably lower figure.

The beekeeper who still holds his honey crop is asking himself: "Shall I hold onto my crop or sell now for what I can get?"

Gleanings does not advise its readers when nor at what price to sell their honey. But here is an opinion expressed by a friend of all beekeepers that we quote with approval: "Hold your honey and do not overstock the market just at this time, with the result that the price of honey may take a decided drop. If the owners of honey will hold on and ask the now current price for their crop, they will get it or get very near it. Since the armistice with Germany was signed by the Allies and the end of the war assured, the honey market has weakened but very little—much less than expected, and the only sign of weakness that has shown up has been that of a readiness on the part of some holders of honey to dispose of their stock now and at once. There is no reason, if the market is not flooded with offerings of honey right now, why the price of honey should not stay up just as the price of most foodstuffs is doing in view of the world-wide food shortage."

Below we give market quotations made in almost every instance since the armistice was signed on Nov. 11:

U. S. Government Market Reports.

HONEY ARRIVALS SINCE LAST REPORT.

Medina, O.—10,000 lbs. from New York; 60,000 lbs. from Nevada; 280 lbs. from Ohio.

SHIPPING POINT INFORMATION.

San Francisco Cal., Nov. 14.—Demand and movement moderate. No change in prices. Cash to producers at country loading points: extracted per lb., water white, receipts very light, 22-23½¢; sage white, supplies moderate, 20-22½¢; light amber, supplies light, 18-20½¢; dark amber, 18-19¢. Beeswax: supplies moderate, 35-37½¢ per lb.

Los Angeles, Cal., Nov. 14. Supplies very light. Demand slow. Prices slightly lower. Cash to producer on farm: extracted, light amber, sage and mixed, in small lots, 21-21½¢ per lb.; white sage and orange, supplies practically exhausted, very few sales, 22-22½¢; light amber and alfalfa, mostly 20-21¢. Comb: 24-section cases, No. 1, \$5.50 per case. Beeswax: 36-37¢ per lb.

UNOFFICIAL SHIPPING POINT INFORMATION.

Caldwell, Idaho, Nov. 13.—190,416 lbs. shipped. Demand moderate. Little change in prices. Carloads f. o. b. usual terms: extracted, 60-lb. tins, 22½-23¢ per lb. Comb, 24-section cases, No. 1 fancy, mostly \$6.00; No. 2, mostly \$5.75; No. 3, mostly \$5.50.

TELEGRAPHIC REPORTS FROM IMPORTANT MARKETS.

(The prices quoted in this report, unless otherwise stated, represent the prices at which the "wholesale carlot receivers" sell to the "jobbers." Arrivals include receipts during preceding two weeks. Prices represent current quotations.)

Chicago.—Two California, 2 Utah, 1 Idaho, 1 Michigan, and 1 Wyoming arrived. Supplies moderate. Demand and movement good. Prices

slightly higher. Sales to jobbers: all sections, extracted per lb., white, 25-28¢; extra choice, 30¢; amber 23-25½¢. Comb, 24-section cases, No. 1, 34-35¢; No. 2, 30-32¢. Beeswax: 38-40¢ per lb.

Denver.—Approximately 5,000 lbs. extracted arrived. Comb receipts light. Demand and movement moderate. No change in prices. Sales to jobbers: Colorado, extracted, per lb., white, 25¢; white comb, 24-section cases, No. 1, \$6.30; No. 2, mostly \$5.85. Beeswax: cash to producer on farm, 35¢ per lb.

Kansas City.—No carlot arrivals. No cars on track. Supplies light. Demand and movement moderate. Prices slightly higher. Quality and condition generally good. Sales to jobbers: Colorado, extracted per lb., light 27¢. Comb, 24-section cases, No. 1, \$7.25; Missouri, 24-section cases, No. 1 light, \$8.50. Beeswax: no sales reported.

Cincinnati.—One Idaho, 1 Colorado, and 1 California arrived, l. c. l. and nearby receipts very light. Sales to jobbers: extracted, demand and movement moderate, alfalfa and sweet clover, 29¢; amber, sales insufficient to quote. Comb, demand and movement good, 24-section cases, No. 1 white, \$7.00-\$7.25; few sales \$7.50. Beeswax: no sales reported.

Minneapolis.—Homegrown receipts liberal. Supplies moderate. Demand and movement good. No change in prices. Sales direct to retailers. California, Minnesota and Colorado, quality and condition generally good, extracted, 10 and 60-lb. cans mostly, 26½¢ per lb. Colorado, quality and condition good. Comb, white fancy, 24-section cases, \$7.00-\$7.25 per case.

St. Paul.—Homegrown receipts liberal. Supplies moderate. Demand and movement moderate, little change in prices. Sales direct to retailers, Minnesota, extracted, per lb., few sales, mostly 30¢; Colorado, quality and condition generally good, comb, white fancy, 24-section cases, \$7.00-\$7.50.

Spokane.—No arrivals. Demand and movement slow. Very few sales on account high prices. Quality and condition good. Sales direct to retailers: Idaho, extracted per lb., 5-gal. cans, white alfalfa, 27-30¢; comb, white alfalfa, 24-section cases, No. 1, \$7.25; No. 2, \$7.00 per case.

Philadelphia.—Extracted, 103 bbls. from Florida and Georgia; 90 120-lb. cases and 155 60-lb. cases from Mexico and Porto Rico; 30 bbls. and 208 120-lb. cases from New York arrived. Comb: 1,692 24-section cases from New York arrived; few sales. Sales to manufacturers, extracted per gal., barreled, Florida, Georgia, New Mexico, and Porto Rico, \$2.55-\$2.60; Florida and Georgia, extracted, screened, per lb., kegs, 25¢.

New York.—390 bbls., 50 tierces, from Porto Rico arrived. Demand moderate. Market steady. Porto Rico, extracted, per gal., \$2.35-\$2.45; California, extracted, per lb., white, 25-30¢; light amber, 24-28¢; New York, extracted, per lb., buckwheat, 22-24¢. Comb, clover, 30-35¢ per lb. Beeswax: 50 bags from Porto Rico, and 185 bags from South America arrived; demand and movement moderate; market steady; imported, light, 42-44¢ per lb.; dark, 40-42¢ per lb.; domestic, 39-40¢ per lb.

Portland.—Demand and movement slow. Prices slightly lower. Sales direct to retailers, extracted, 60-lb. tins, 25-28¢ per lb.; 1 large lot, 23¢ per lb. Comb, demand and movement moderate, 24-section cases, fancy, \$7.75; No. 1, \$7.25; No. 2, \$6.75; No. 3, \$6.00.

Charles J. Brand,
Chief of Bureau of Markets.

Washington, D. C., Nov. 16.

General Quotations of Wholesalers.

[These firms are asked to quote the wholesale price they make to retailers. Accordingly their prices must be figured at least one profit higher than the price paid the producer. The large dealers do not quote prices in print that they will pay futuramente to producers.]

NEW YORK.—We quote from several of the leading honey dealers in New York City, date of Nov. 15, as follows:

"Market very unsettled; nobody can say whether it will go higher or lower. The English market is going to be opened again for importations; also we will have other European markets, but this country is going to allow again the importations. What all

this will do nobody can say. Extracted honey, white, per lb., 26c; light amber, in cans, 25c; in barrels, 22c; amber, in cans, 24c; in barrels, 20c. Clean, average yellow beeswax, per lb., 45c."

"No apparent change in market. Good demand. Market steady. Receipts ample for requirements. Comb honey, extra fancy, per case, \$8.00; fancy, \$7.20; No. 1, \$6.50; No. 2, \$6.00. Extracted honey, white, per lb., 25c; light amber, in cans, 24c; in barrels, \$2.40 per gal.; amber, in cans, 23c; in barrels, \$2.35 per gal. Clean, average yellow beeswax, per lb., 40 to 44c."

"Honey is steady with a fair demand. Offerings and arrivals from the West Indies are more plentiful. There is a disposition on the part of importers to sell quickly. Beeswax is firm and in demand. Extracted honey, white, in barrels, \$2.40 to \$2.45 per gal.; amber, in barrels, \$2.35 to \$2.40 per gal. Clean, average yellow beeswax, per lb., 44 to 45c."

"There is no definite conclusion to base probable honey changes or advances in this period of sudden peace, as there are only limited quantities of white extracted carried and what is held is getting top price. We think that prices of white grades will continue as now quoted, and probably higher figures for a while yet, due to white honey being held tightly. Quite a few New York crops still being sold at farm, as held by farmers and now being unloaded, as we are receiving daily many offers on white clover. Comb honey, extra fancy, per case, \$9.00; fancy, \$9.00; No. 1, buckwheat, \$8.00 to \$9.00. Extracted honey, white, per lb., 25-27c; light amber, in cans, 25-26c; in barrels, 23c; southern white and amber, 19 to 20c."

LIVERPOOL.—We think it may be regarded as definite now that the Food Controller will not interfere with the price of honey. There was some talk of rationing, but the latest information is that this proposal has fallen to the ground, which we think is a very wise decision. On the other hand, there seems to be some misunderstanding between the American and the English Food Controls in reference to the export of honey from America to Europe. The result is that up to now we have been prevented from purchasing honey in America. We are agitating for this to be straightened out and we are in hopes of something being arranged. In the meantime the price of honey has stiffened here and we have a firm market for good extracted honey at 43 to 46 cents per lb. Transactions have taken place at the following prices: Chilean, sold afloat, at 45 to 47c per lb.; Argentine, sold afloat, at 45c; Cuban, sold afloat, at 43 to 45c; Jamaica, sold afloat, at 42½c. On beeswax, the market still remains quiet and prices are much the same as we last quoted, namely, good quality worth 48 to 50 cents per lb. Liverpool, Eng., Oct. 25. Taylor & Co.

CHICAGO.—Comb continues short of demand and prices are firm. This is also true of extracted at present. The weather has been favorable to forwarding and consignments are arriving in good condition. Comb honey, extra fancy, per lb., 35c; fancy, 33 to 35c; No. 1, 32 to 33c; No. 2, 28 to 30c. Extracted honey, white, per lb., 25 to 27c; light amber, in cans, 22 to 23c; amber, 20c. Clean, average yellow beeswax, per lb., 35 to 40c.

R. A. Burnett & Co.

Chicago, Ills., Nov. 14.

ST. LOUIS.—There is no comb honey on this market as producers are holding at prohibitive prices. Extracted honey in fairly good demand, but supplies not large. Extracted honey, light amber, in cans, 28c, in barrels, 26c; amber, in cans, 27c, in barrels, 25c. Clean, average yellow beeswax, per lb., 41½c.

R. Hartmann Produce Co.

St. Louis, Mo., Nov. 18.

KANSAS CITY.—Demand good on comb; a little slow on extracted. Comb honey, fancy and No. 1, \$7.00 to \$7.25 per case; No. 2, \$6.75 to \$7.00. Extracted honey, white, per lb., 28c; light amber, in cans, 26c. Clean, average yellow beeswax, per lb., 35c.

C. C. Clemons Produce Co.

Kansas City, Mo., Nov. 11.

PORTLAND.—Since our last report the demand has been good for both comb and extracted, but tendency is to cheaper grades of sweetening. No material change in comb, but firmer prices on extracted. Comb honey, extra fancy, per case, \$7.50;

fancy, \$7.00; No. 1, \$6.75. Extracted honey, white, per lb., 26c; light amber, in cans, 24c; amber, in cans, 22c.

Pacific Honey Co.

Portland, Ore., Nov. 13.

ARIZONA.—Honey is practically all out of the valley. Comb honey sold for 30c per pound section. Some sold at 20c per lb. section, not very choice and quite dark. Extracted honey, white, per lb., 25c; light amber, in cans, 21c. Clean, average yellow beeswax, per lb., 32c.

Phoenix, Ariz., Nov. 12. L. M. Lossing.

TEXAS.—The rains of the past month have enabled the strong colonies to obtain some surplus. Light amber, in cans, is selling for 21c, and amber at 18c. Clean, average yellow beeswax, per lb., 35c.

Sabinal, Texas, Nov. 16. J. A. Simmons.

DENVER.—We quote comb honey, extra fancy, per case, \$7.50; No. 1, \$7.00; No. 2, \$6.50. Extracted honey, white, per lb., 28c; amber, in cans, 24c. Clean, average yellow beeswax, per lb., 38c cash, 40c trade.

The Colorado Honey Producers' Association.

Denver, Col., Nov. 18.

SYRACUSE.—The market conditions seem to be a little weaker here, if anything, than last month. Honey does not seem to be moving at retail quite as well at present. Comb honey, extra fancy, per case, \$7.68; fancy, \$7.00. Extracted honey, white, per lb., 25-28c; light amber, in cans, 22-25c; amber, 20c.

E. B. Ross.

Syracuse, N. Y., Nov. 14.

CLEVELAND.—Receipts have been larger the past few days and market is now fairly well supplied with comb honey. It is selling slowly on account of the extremely high prices. Comb honey, fancy, per case, \$8.50; No. 1, \$8.00; No. 2, \$7.00 to \$7.50.

C. Chandler's Sons.

Cleveland, O., Nov. 14.

HAMILTON.—We have been receiving a very choice lot of strained honey in all sizes of tins from 2½ to 60-lb. this month and more is offering. Some buckwheat came and found slow sale. No comb honey. Extracted honey, white, per lb., 29c.

F. W. Fearman Co.

Hamilton, Ont., Nov. 14.

TORONTO.—The market is a little easier owing to the fact that many of the beekeepers who have been holding back their honey until they were sure of getting supplies of sugar, are now offering on this market. Wholesale market, however, is still unchanged.

Eby-Blain Limited.

Toronto, Can., Nov. 16.

MONTREAL.—Clover honey is in good demand. Supplies none too plentiful. Dark honey plentiful and sellers more anxious now to clean up. Comb honey, extra fancy, per lb., 30c; fancy, 29c; No. 1, 28c; No. 2, 25c. Extracted honey, white, in 10-lb. tins, 28c; in 60-lb. tins, 27c; light amber, in 10-lb. tins, 25c; in 60-lb. tins, 24c; amber, in 10-lb. tins, 23c; in 60-lb. tins, 23c.

Gunn, Langlois & Co., Ltd.

Montreal, Can., Nov. 18.

CUBA.—Extracted honey, light amber, in barrels, \$2.00 to \$2.05 per gal.; amber, in barrels, \$2.00 to \$2.05. Clean, average yellow beeswax, per lb., 39 to 40c.

Adolph Marzol.

Matanzas, Cuba, Nov. 12.

Classified Advertisements—Received Late

FOR SALE.—Clover, amber and buckwheat honey in 60-lb. cans. C. J. Baldrige, Kendalia, N. Y.

Beeswax worked into comb foundation at money-saving prices. Satisfactory work guaranteed. Send for terms. E. S. Robinson, Mayville, N. Y.

FOR SALE.—Root and Falconer goods, 8 and 10 frame size; new and second-hand. Send for printed matter.

A. Bradbury, Monument Beach, Mass.

Season 1919 Begins



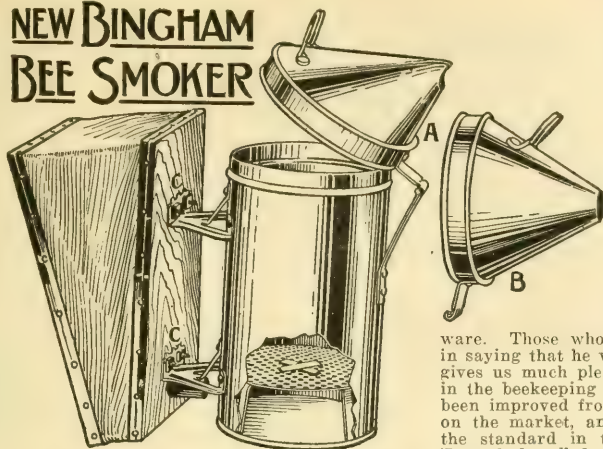
EASON of 1918 is now closed. Inventory taken and supplies ordered for Syracuse Branch for 1919. Where would I be next summer if I delayed getting in my stock till next May? For the last month I have had some orders from beekeepers that are wide awake, but I would be greatly pleased if more orders are received long before the time they will be needed. This will relieve me quite a lot next summer when the behind-hand ones begin to know they are in want of supplies.



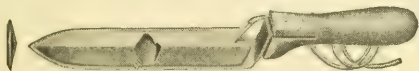
F. A. SALISBURY

1631 WEST GENESEE STREET
SYRACUSE, NEW YORK

NEW BINGHAM BEE SMOKER



THUMB REST



by others have not given the satisfaction desired.

A. G. Woodman Co.

Gentlemen:—Have you the thin good-working uncapping-knives we used to get about 20 years ago, and that worked to perfection?

We sent an 8½ and 10 inch knife and received the following letter:

A. G. Woodman Co.

Gentlemen:—Knives received; glad you sent them at once. They are just what I want and have been looking for but did not know where to get them.

Lyle, Minn., June 21, 1917.

K. H. VOLSTAD.

Many of the most extensive honey producers insist on the Genuine Bingham knives. Mr. N. E. France of Plattsville, Wis., gave us a fine unsolicited testimonial on the steam-heated Bingham knife, too long for this space.

	Weight	Price
8½ inch blades.....	12 oz.	\$1.20 each
10 inch blades.....	14 oz.	1.35 each
10 inch blades, steam heated with tubing.....	20 oz.	4.00 each
Steam Generator, with safety valve.....	40 oz.	2.00 each
Double burner oil lamp stove.....	7 lbs.	2.00
Postage extra.		

TIN HONEY PACKAGES

2 lb. Friction top cans in cases of 24	5 lb. Friction top pails in crates of 100
2 lb. Friction top cans in crates of 612	5 lb. Friction top pails in crates of 203
2½ lb. Friction top cans in cases of 24	10 lb. Friction top pails in cases of 6
2½ lb. Friction top cans in crates of 450	10 lb. Friction top pails in crates of 113
5 lb. Friction top pails in cases of 12	

Write for prices on friction top cans and pails and 60-lb. cans, giving quantity wanted.

A. G. WOODMAN CO., Grand Rapids, Mich.

In 1878 the original direct draft bee smoker was invented and patented by Mr. T. F. Bingham, of Michigan. Mr. Bingham manufactured the Bingham Smoker and Bingham Honey-knife for nearly thirty-five years; and in 1912, becoming a very old man, we purchased this business and joined it to our established business of beekeepers' supplies and general bee-

ware. Those who knew Mr. Bingham will join us in saying that he was one of the finest of men and it gives us much pleasure to help perpetuate his name in the beekeeping industry. Bingham smokers have been improved from time to time, are now the finest on the market, and for over forty years have been the standard in this and many foreign countries. For sale by all dealers in bee supplies or direct from the manufacturers.

	Size of Stove	Weight	Retail
Smoke Engine.....	4 x7 inch	2¼ lbs.	\$1.50
Doctor.....	3½x7 inch	2 lbs.	1.15
Two above n copper, extra, each.....			1.00
Conqueror.....	3x7 inch	1¾ lbs.	1.00
Little Wonder.....	3x5½ inch	1¼ lbs.	.80

Bingham Honey Uncapping Knives with New Cold Handles

We are furnishing the same quality steel, best money can buy, thin-bladed knives that Mr. Bingham manufactured years ago. The old timers all remember these knives and many are writing in as Mr. Volstad in the following letters. The substitutes offered

MR. BEEKEEPER

You Can Help The Work of Reconstruction

.. BY ..

Ordering Your Supplies Now

.. BY ..

ordering standard goods so as
to enable manufacturing plants
to increase production

.. BY ..

wintering your bees with care-
ful attention to their comfort
and safety

Get busy now and make up a list of your requirements
---take advantage of prevailing transportation condi-
tions, later on it may be more difficult to secure prompt
shipment. Remember, every pound of honey produced
will release its equivalent of butter or sugar for other
purposes of food.

INCREASE YOUR HONEY PRODUCTION
THE ITALIANS ARE OUR ALLIES

G. B. Lewis
Company



Watertown,
Wis.

Order from your nearest distributor.

GLEANINGS IN BEE CULTURE

DECEMBER, 1918

EDITORIAL



IN VIEW of the orders to all publishers, emanating from the War Industries Board, to economize on the use of paper in all possible ways, we do not bind the index for this year's volume in the last number of the year, as usual in the past. Many of our readers do not preserve complete volumes of *Gleanings*, and so do not require the annual index. To those who desire this index, we shall be glad to furnish it on receipt of a line from them requesting us to do so.



BEEKEEPERS who have need of more bees next spring will do well to put in their orders early with well-established concerns. The experience of last year showed that some beekeepers bought heavily of new concerns that were unable to fill orders and did not always act along the lines of good business principles and strict honesty. The old reliable houses will inform customers when their limit for filling orders has been reached and will return any money that may have been sent when they see their capacity for filling is exceeded. We suggest the advisability, when dealing with new and untried concerns, of placing the money in a bank or in the hands of a third party, with instructions to pay it to the shipper as soon as notified by the customer that the order has been satisfactorily filled.



FOR THE aluminum comb manufactured by the MacDonald Artificial Honey-Comb Co., several important advantages are claimed. Among these are ease of sterilizing in case of disease, elimination of drone brood and of moths, impossibility of melting down in hot weather, or of breaking when extracting. We, accordingly, desired to try out some of this metal comb during the season just past, but were unable to obtain any until so late that we do not feel justified in giving a complete report at present. At first, we had some doubt as to whether the bees would fill in the the numerous holes at the bases of the cells. When A. I. Root was asked his opinion, he said: "Better put it up to the bees." Accordingly, we did so and found they soon overcame that objection.

In straightening out the bent edges of cells that had been accidentally jammed, however, they were not equally successful. We have reports from several beekeepers to the effect that this aluminum comb has been accepted by the bees both for storing honey and brood-rearing, and, in their opinion, is a success. Next summer, after trying out this new invention thoroly, we shall be pleased to make a definite report, hoping in the meantime that beekeeping may have scored another advance. But until we have thoroly tried out this new comb, made of material so entirely unlike that of the natural comb and so unyielding to any manipulation by the bees themselves, we wish to reserve judgment.



THE GREAT WAR, the like of which never was and never will be again, has been brought to a close; or at least we may say that the awful business of killing has been suspended.

With the end of hostilities there are new problems and momentous possibilities before us. The beekeepers of the country during the past four years of awful slaughter have arisen to the occasion. Their sons have gone across and over the top. They have helped to relieve congestion of the sugar shortage not a little. Almost to a man the great mass of beekeepers went into the production of extracted honey; for by so doing they could nearly double the amount of honey. Many were equipped for the production of comb honey only, and the change to extracted meant a large investment of money as well as a change in methods.

If ever any industry speeded up it was the business of producing honey. Colonies were made enormously strong, and tiered up until they were head-high.

The demand for bees in package form was beyond all precedent; for the slogan was, "Bees, more bees, and then more bees." Some of the largest commercial producers discovered that when they changed over from comb to extracted they could handle very nearly double the number of colonies with the same amount of help. Following the suggestion of *Gleanings*, many producers bought up bees in their surrounding vicini-

ties—bees that would have done little or nothing for their own owners, and put them in the class of honey money-makers—the class that would help relieve a starving world.

The severity of last winter took a fearful toll of bee life. It is probable that the winter of a year ago in the Eastern States was the severest ever known. Fortunately the commercial producers had fortified themselves and were ready for the emergency. But in spite of all their painstaking care the mortality was greater than for many years previous.

The season, however, opened up with the brightest of honey-price prospects and honey flow. Then came the demand for bees in package form. So great was the call that practically all the package men of the South were oversold.

So much for the past. What of the future? Will the demand for honey keep up as heretofore? Will it go to Europe by the shipload? Will the wholesale and retail grocers buy it by the carload? Will the price go higher or come down? Will the prospects of a normal or mild winter (on the theory that two severe winters seldom or never follow consecutively), will the fine prospects of clover, that have been abundant everywhere this fall all over the Eastern States, and will the possibility that prices on all food stuffs may sag, cause the price of honey to sag the coming year?

In seeking an answer to these questions, it may be well to review the course of last year's honey markets. When prices shot up on extracted honey from 12 and 13 cents in July and August to 20 and 22 cents in carlots f. o. b. New York in December and January, the question was raised, "Would these prices go down or up in 1918 with the prospects of a bumper crop in sight?" The prediction last year in big buying circles, and especially among the brokers who were looking for a chance to make a scoop, was that there would be a sag. But there was no sag. Prices began to climb. When they got up to 16 cents buyers began to say (and most of them were honest in the belief) that the price could not hold up. When the price went up to 18 cents they were staggered. When the figures began to move around 20 cents it seemed inevitable as fate that they would slump. In the mean time there were rumors of boatloads of honey going to Europe—of how the boys on the other side were paying \$1.60 for a pound bottle of American honey. Prices continued to go up, but seemed to become more stationary at 20 to 22½ cents a few weeks ago.

So it will be seen that all prophecies concerning the honey market last year failed and may again.

Now that the war is over, will honey prices drop or stay high?

Here are some facts that might lead to the conclusion that prices will drop: While it is figured that it will take two years to bring the boys back to America, the very

process of bringing them back may release thousands of tons of shipping space for carrying food stuffs from America to Europe to feed not only the allies but the people of the central powers against whom we have been waging war. Already the Food Administration at Washington has issued a statement to the effect that the release of shipping space will have a tendency to increase the quantity of sugar and coffee in this country. This is doubtless true, considering the large quantities of sugar held in both the East and West Indies. With the importation of a large amount of sugar the price of honey would naturally fall. Even at present there are indications of a more plentiful domestic supply of sugar, for the authorities at Washington now make it possible for each person to have four instead of two pounds of sugar monthly. The possibility and probability that the hundreds of thousands of tons of sugar in the West Indies will soon be released may have the effect of increasing the amount of sugar per capita still more. It was the sugar shortage that stimulated an enormous domestic call for honey, and this shortage may soon begin to be relieved.

Now, on the other hand, there are factors warranting the belief that the price of honey will continue high.

The sugar refineries of Europe in the areas devastated by war have been destroyed. Thousands of acres that were formerly devoted to growing beets for sugar have been turned over to the growing of grains. The result is that Europe has almost no sugar in sight.

The process of demobilization will be comparatively slow. The internal troubles that the European powers are encountering will require an enormous policing, taking millions of men to restore and maintain order. These men who would otherwise be producers in Europe will have to be fed. Then, moreover, there will be the millions of people homeless and landless who will have to have food. It is evident, therefore, that it will tax all the resources of both Americas to feed these people, and food supply and food conditions are likely to remain much the same as during the last several years.

Mr. Hoover has said, since the armistice with Germany was signed, that he did not expect any great slump in the price of food—not for a year at least. He even thinks that the demand will be even greater, because the central powers will have to be fed as well as our allies.

Now, balancing all these factors in the food market situation, it is our honest opinion that honey has about reached its peak in price, our chief belief for saying this being the likelihood of an increasing supply of sugar both in America and Europe. But we are not expecting an immediate slump. What prices will be twelve months hence no one can foretell; but the probabilities are that prices of all foods will change gradually with a tendency downward.

THERE are numerous instances all over the United States where the combination of producing honey and raising fruit is conducted on a large scale. I have already told you about C. J. Baldrige, Kendaia, N. Y., a man who is making a success of operating extensive bee-yards and fruit-growing ranches together. Experience seems to show that the conflict between the two lines of industry is negligible, and that, in order to grow fruit, at least a few bees are necessary if not a vital factor in the business. In most cases the pollination of blossoms is the main object. In other cases honey is the primary object, while the growing of fruit is merely secondary. In still other instances we find cases where the two lines of industry are operated at their utmost, the same labor and brains taking care of the two lines of business.

WHEN TO USE THE BIG HIVE

Its Points of Advantage for the Fruit Grower or Others who Keep Bees but Cannot Give All Their Time to Them

By E. R. Root

Seventy-Acre Orchard and 300 Colonies. In the last-mentioned class we have a very fine example in the case of Adams & Myers, at Ransomville, N. Y. The firm operates a 70-acre orchard, mainly peaches, in the very prime of their productiveness. They also run 300 13-frame colonies; and such colonies as they are! Mr. Adams and Mr. Myers, with the help of one or two men, do all the work; and it is their statement that the lines of industry do not conflict as they operate. The spraying and pruning come mainly at a time when the bees require little or no attention.

Seventy-Acre Orchard and 300 Colonies.

Big 13-frame Hives for Fruit Growers. If their bees were in 8-frame hives, Adams & Myers said the bees might require considerable spring management; but, fortunately for them, the hives are all 13-frame. The colonies are so populous and so well provided with stores, mainly natural stores, in the fall, that very little spring management is required, except in the matter of unpacking. The big hive is certainly the proper thing for the fruit-grower or any other man who is operating some other line of business, and who wishes to work on the let-alone plan at certain seasons of the year.

Figs. 1 and 2 show the kind of hives and colonies these men believe in; and, if the old proverb about the proof of the pudding means anything, they are not far wrong in the selection of a hive adapted to the circumstances of the fruit-grower.

During winter weather, shut in to a greater or less extent, Adams & Myers make their own hive equipment, operating a buzz saw with the same engine that operates the extractor. Few men are mechanics enough to make their own stuff. But one member of this firm knows how to make a close fit. It is the senior member, Mr. Myers, shown in Fig. 1.

One would think that these two men

would be so busy in their fruit-growing operations that they would not have any time to give any attention to their bees. I spent two or three days at their place watching them in their work. If I know anything about fruit-growing (and I think I do), and if I know anything about beekeeping, nothing in their line of business is neglected. Their crops of honey and the earloads of fruit that they produce show that these men, in the parlance of the street, are "onto their job."

Big Hives Not Back-Breakers.

I said to Mr. Myers, "I do not see how you lift those great 13-frame hives."

"They are a great deal handier," he replied, "in my opinion, than 8-frame hives



Fig. 1.—This is taken from the apiary of Adams and Myers, near Niagara Falls, N. Y. These men are extensive fruit-growers as well as beekeepers. Mr. Myers is shown just back of one of his colonies that are not uncommon. The hives shown are 13-frame Langstroth, or an aggregate of 65-frames capacity, which, when translated into 8-frame supers, would make a colony eight stories high and one frame to spare.

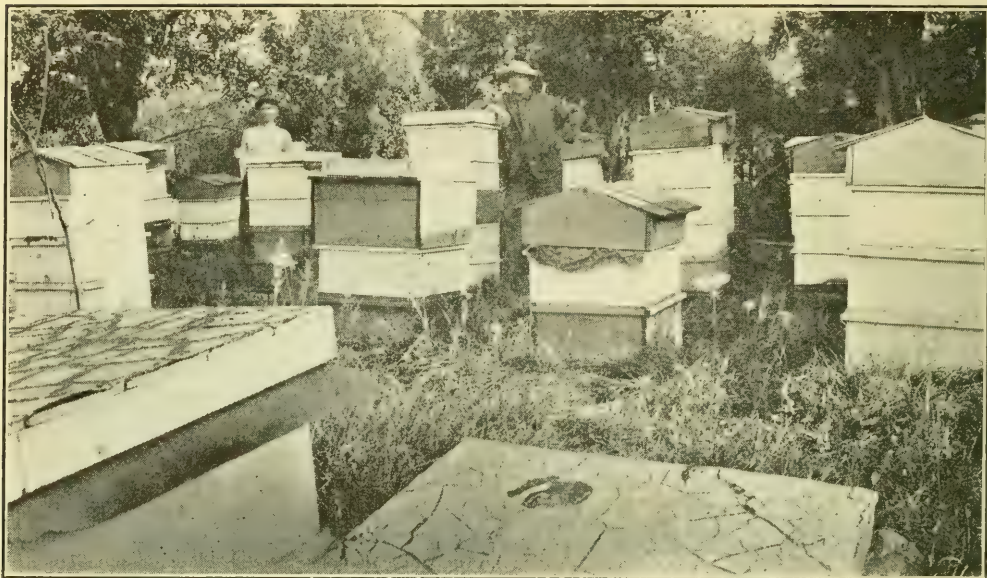


Fig. 2.—The home apiary of Adams & Myers, extensive fruit-growers near Niagara Falls, N. Y. Mr. Adams is shown on the left and Mr. Myers on the right. They believe in windbreaks as will be seen at the background facing north. They believe in packing and 13-frame colonies that will not swarm. They are prosperous business men. The methods that these men employ in operating the bee and fruit ranch could be copied to advantage by others.

of an equivalent capacity tiered away above my head. I can lift a heavy load along about the height of my chest or waist, when half of that load might be considerable of a strain if it were above my head."

I watched these men at work. It was evident that by their management they do not "break their backs" any more than the beekeepers with hives of 8- and 10-frame capacity. The secret of it is that the individual unit, while heavier, can be lifted to better advantage because it is never above the chest line. I became convinced that the statement that "a 10-frame hive is all that a man can lift" is not true. I also became convinced that the 13-frame hive is better than a 12-frame one because it is exactly square. There are some queens that go a little beyond 12 frames, but seldom beyond 13.

Advantages of a Square Hive.

Another advantage of having a hive square (13-frame) is that the cover and bottom will always fit, no matter how placed; and if one believes that frames crosswise of the entrance are better than frames lengthwise, he can have his choice. As a matter of fact, he can run them lengthwise during the summer and crosswise during the winter.

Little or No Swarming Trouble.

I asked Mr. Myers whether he was troubled much with swarming.

"Very little," he replied. "We have tried enough of the 8- and 10-frame hives to know that we could not use them. The fact that we can have powerful colonies—

colonies that will rarely swarm—decided us in favor of a 13-frame hive. With such hives we can give the bees attention at our convenience. We are not compelled to drop everything and run."

Easy to Prepare for Winter.

There is a further advantage in the big hive; and that is that the brood-nest can be contracted to eight or nine frames, and the space on each side can be filled with packing for winter. In the spring it is very easy to reduce or remove the packing and add additional combs.

If I were a fruit-grower, I am frank to say to our readers that I would adopt either the 13-frame hive or the long-idea hive with 30 or more frames. I would make the long or coffin-like hive so that I could put on upper stories of ordinary 10-frame hives whenever the needs of the colony called for 30 frames. In this connection I wish to say that the modern commercial beekeeper, running for extracted honey, who does not contemplate colonies that will pretty nearly fill a barn, is losing the chance of his life to make money if he is in a good locality.

Inside the Honey-House.

Let us now look into the beehouse where Adams & Myers do their extracting. We find a modern 8-frame power-driven reversible extractor, capping-melter, buzz-saw table, tools, and all other appliances that good mechanics and practical men know how to utilize. We shall find something more, and that is shown in Figs. 3 and 4. You will hardly be able to understand what all this outfit means till it is explained. Listen.

Adams & Myers have a trade that calls for honey in bulk in the liquid form. While they sell honey by the carload, they also sell it in 1- and 5-gallon cans. This retail trade wants its honey in bulk, but it wants it so it will pour; so they devised the apparatus shown in Figs. 3 and 4. The honey is pumped from the bottom of the extractor into the galvanized washtub shown at the top of the pictures. The pipe line is shown in Fig. 4. The honey runs from the tub into what is virtually a large Peterson capping-melter. This is an oblong pan with a double bottom filled with water. A Standard Oil kerosene stove beneath keeps the water hot in the pan above. The honey runs from the galvanized tub; and as it runs along the bottom of the pan it is heated. While hot it readily runs thru the strainer of cheese-cloth tied over the top of the galvanized can which in the picture shows right next to the carpenter's handsaw. The hot honey readily runs into a large receiving-tank whence it is drawn off into five-gallon cans and sealed.

This apparatus is about as near perfection as anything I have ever seen. The honey from Adams & Myers goes to their customers in liquid form, and it stays that way. Their local and retail trade has learned to use honey in bulk.

Making Nuclei from Bees Collecting in the Honey House.

In nearly every extracting-house, after the combs have been extracted for a day or two there will be an accumulation of bees in some corner of the building, usually near the window or screen. Adams & Myers employ a scheme of putting a nucleus with two or three frames of brood near this bunch of bees. Very shortly the bees will go in and occupy the combs. When the nucleus is full, it is removed and another one put in its place. In this way no bees are lost.

Fig. 5 shows a corner of Adams & Myers' extracting-room, and at the upper right-hand corner near the top is a nucleus covered with a piece of burlap. This was the first time I ever saw this scheme worked out. Other beekeepers let their bees starve, as

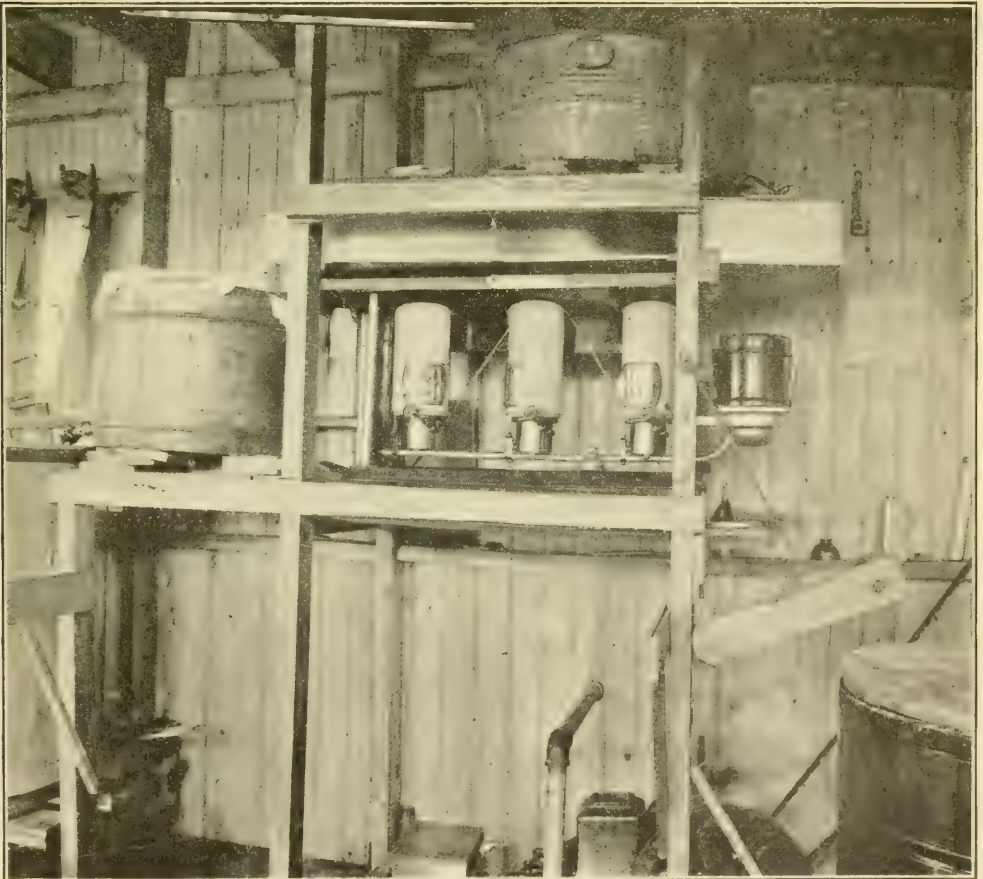


Fig. 3.—This picture should be studied in connection with Fig. 4. The honey is pumped from the extractor into the washtub above; passes into a double-bottom water pan beneath, the water being kept hot by means of a Standard Oil kerosene stove just beneath the pan. The honey is heated as it passes over this double bottom, strained as it runs thru the tank at the left, and finally runs into a large receiving tank below.

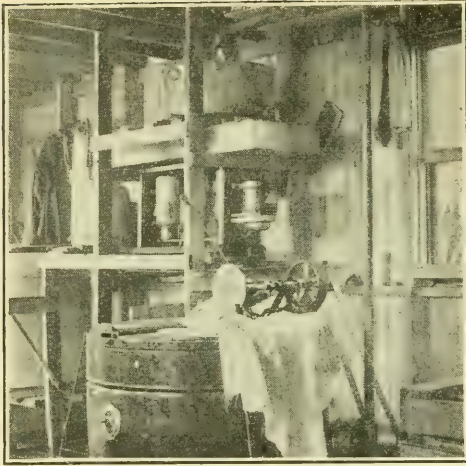


Fig. 4.—Another view of the honey-processing room of Adams & Myers, showing the power plan and extractor.

they say they are not worth saving. I doubt it.

I introduce Adams & Myers at this time because there are many beekeepers "on the fence" as to the style and size of hive they should use. During the winter months beekeepers will need to be making their plans as to what they are going to do. If they want to know my opinion I would say that if they are in some other line of business, such as farming or fruit-growing, they will not go far wrong if they adopt a 12- or 13-frame hive; and I have yet to meet a practical honey-producer who will deny that such a hive is an advantage. If it did not "cost

so like fury," many of them would change over. Then there is a large class who fear that they could not lift such big hives. If you could see Adams & Myers at work, you would discover that it is more a matter of brains than of muscle. The right use of a wheelbarrow at the right time and place, suitable runways to and from the honey-house, and a knowledge of how to "get the advantage of a burden," will overcome to a great extent the problem of lifting.

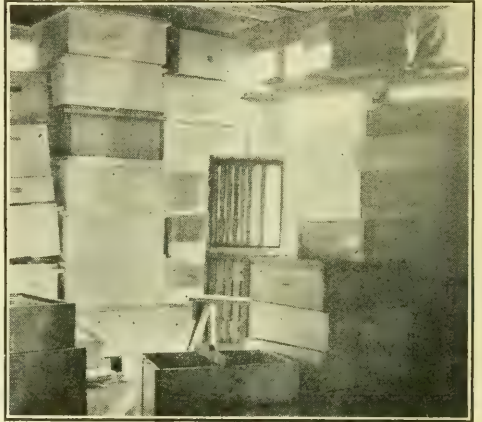


Fig. 5.—The point of interest in this picture is the little three-frame nucleus next to a screened window, at the upper right-hand corner of Adams & Myers' extracting-house. The bees, as they are brought into the extracting-house, gradually accumulate at the top of the window. A little nucleus containing three frames of brood is placed near this bunch of bees. They gradually work down into this nucleus, after which it is put out into the yard and given a queen-cell or a queen.

WHEN we built our new beecellar, we expected to realize some of our dreams of perfect wintering, for this cellar was built so deep into the ground and protected above so well that its temperature was affected but little by the fluctuations of the temperature outside. In addition to this, a mammoth ventilator of the Bingham type was installed and equipped with a regulating device, by means of which it was not difficult to hold the temperature at 45 degrees, which at that time was considered the proper temperature for bee-cellars thruout the winter.

The bees did winter well in this cellar, if we use the ordinary definition of good wintering. The colonies that were given granulated sugar syrup for winter stores showed

WITHIN THE BEE CELLAR

No Hard and Fast Rules Concerning Temperature and Ventilation. Vary According to Behavior of Bees

By Belva M. Demuth

about as near perfect wintering as we have ever seen; but, as a means of wintering colonies on natural stores as they average year after year with

us, this elaborate and expensive cellar was a disappointment. To go into the cellar during December or January and note the feeling of warmth on entering and then observe the masses of motionless and apparently contented bees hanging comfortably below the combs, was enough to make one regret having left half of the colonies outside to weather the blizzards of the cruel northern winter. To go in again, the latter part of February and March, and note the greatly increased death rate, as testified to by the number of dead bees to be swept up, and the restlessness of many of the colonies win-

tering on natural stores, sometimes caused a feeling of guilt.

Different Behavior of Colonies Wintered on Honey.

I do not mean that our natural stores were unfit for cellar wintering, but they were not good enough for perfect results at 45 degrees. In other words, the colonies using natural stores were the best indicators as to the character of the wintering. They were more sensitive in their response, and the results were greatly magnified when compared with those wintered on sugar syrup. We were not willing to quit wintering a part of the colonies each year on natural stores, hoping ultimately to find some way to winter perfectly on such stores.

By weighing the hives and contents when the bees were put into the cellar and again when they were taken out, we found that those colonies having only natural stores invariably used a greater quantity than those using sugar syrup. In some cases the amount of natural stores consumed per colony was fully twice that of colonies of equal strength using only sugar stores. In some cases colonies in the cellar that were given rather poor stores apparently consumed during the winter fully as much as, if not more than, those wintered outside where they often endured temperatures below zero for a considerable period of time. It was difficult to understand why these colonies should burn as much fuel, and therefore apparently spend as much energy in the cellar at 45 degrees as those packed outside where the need of heat generation must have been much greater. Furthermore, by far the greater portion of this fuel was burned during the latter part of the winter.

Bees in Cellar More Active During Latter Part of Winter, Regardless of Cellar Temperature.

During the early part of their confinement in the cellar, the activity of the bees is apparently for the purpose of keeping up the necessary temperature of the cluster only, but during the latter part of winter the bees are active because they are uncomfortable (either from accumulated feces or from age). In some cases, perhaps, much more heat is generated late in winter as a by-product from activity resulting from discomfort than the total amount produced for the purpose of keeping up the cluster temperature during the entire winter. Therefore, more bee energy is sometimes wasted and stores needlessly consumed in the cellar, because of discomfort and restlessness, than is used up by colonies of equal strength outside to overcome the greater difference in temperature, thus completely nullifying the advantage of the protection afforded by the cellar.

Higher Temperature Desirable During Early Part of Winter.

We found with this cellar at 45 degrees that the colonies near the ceiling of the cellar wintered better than those lower down where the temperature was lower; also that

colonies crowded down to five or six combs by means of chaff-cushioned division-boards wintered better than colonies of the same strength with the full set of combs; and colonies with contracted entrances wintered better than those having the bottom-boards removed or those having the large summer entrances. All of these things indicated that a temperature of the cellar above 45 degrees would give better results; yet, when we considered the difficulties sometimes experienced in keeping the bees in their hives at higher temperatures, this method of reducing the winter activity of the bees did not look promising.

I remember now, however, that trouble from temperatures too high did not occur until the latter part of the winter. In fact, with the small amount of heat the bees generate during the early part of the winter, it would be difficult to maintain a higher temperature in ordinary bee-cellars without artificial heat. Just at the time when the bees would have been more comfortable and quiet in a higher temperature, we were carefully holding it at 45 degrees, because we thought the best temperature for March must also be the best for November.

When the stores are of such a character that the bees are much more active during the latter part of the winter, it is not reasonable to attempt to maintain the same cellar temperature thruout the entire winter, and the same thing must be true in a lesser degree even with the best of stores. To hold the temperature down to 45 degrees during the early part of winter compels the bees to generate sufficient heat to raise the temperature of all parts of the cluster to at least 57 degrees, and this, too, at a time when the bees are more willing to co-operate in energy-saving than at any other time during the winter. A lower temperature at this time should be deferred until quite late, the time when the bees are generating heat as a by-product because of discomfort. When this time does come, if the stores are such that it comes before time for taking the bees out, it may be well to maintain a temperature of 45 degrees or lower, for then the bees are generating heat regardless of the temperature of the air surrounding them, not for the purpose of keeping warm, but because they are restless.

Bees Are Best Thermometers.

We do not expect again to attempt to regulate the cellar temperature by means of a thermometer hanging somewhere in the bee-cellar, but rather do our regulating by noting the behavior of the bees. When it is right for the bees, it will be well to note the thermometer reading for future guidance. It will be useful in this way only when all other conditions, such as strength and number of colonies, size and shape of the winter chamber, the amount of protection afforded by the hive, the size of the entrances, etc., are exactly the same. The proper cellar temperature is just a shade below that temperature which causes the bees

to form a rather loose but definite cluster. It should be low enough to keep the bees in their hives, and high enough to make it unnecessary for them to generate heat to maintain their necessary cluster-temperature. It decreases as the winter advances or as quiescence decreases. It is not the same for all cellars, for all styles and sizes of hives, for all sizes of entrances, nor for all sizes of colonies. It is a delicate adjustment, but one which may be attained by a careful study of the response of the bees, and will usually be found to lie somewhere between 55 degrees and 45 degrees. During November and December, when the instinct for quiescence is so strong, it is certainly near the higher figure, while in March it may be much lower.

Ventilation.

When the temperature is correct the need

for ventilation is but little during the early part of the winter, because at this time the bees are least active. The fires are now banked, and but little oxygen is needed. When stores are not the best, the need for ventilation increases slightly as winter advances. While but little ventilation is needed to supply the bees with oxygen and to remove the products of combustion during quiescence, we would like to have at all times some movement of air within the cellar for other reasons, if this can be accomplished without causing too low a temperature.

When we can have conditions for either outdoor or cellar wintering, as outlined in these articles since August, we need have no fear of not having colonies abundantly strong on April first.



A sugar train being hauled thru the mountains in Santa Clara Province, Cuba. Urbano Trista Perez, an attorney and beekeeper of Santa Clara, who sent Gleanings the picture, said: "The largest yielders of honey in Cuba are in this order: First, campanilla blanca (or aguinaldo); second, royal palm; third, sugar cane."



CONVERSATIONS with DOOLITTLE

The Necessity for Knowing the Exact Sources of Honey Nectar

"I live in a locality where the wild red raspberry, that blossoms early in the season, abounds and gives the best, and about the only source of surplus honey. Therefore, the all absorbing question with beekeepers here is how shall we have populous colonies early, that we may get a good surplus from raspberry. Can you give us something how this may be done so we can be preparing for the season of 1919?"

Some two score years ago there was a rage thruout nearly the whole country for early brood-rearing, and an apparent strife to see who could induce their bees to arrive at a point strong enough to swarm the earliest. Some carried their colonies into warm rooms during nights and cold spells. Others put hot bricks and irons in the covers of the hives nights; and still others banked the hives, all but the entrance, in heating manure; but the advantage gained proved hardly sufficient to overcome the time, labor, and material used. At that time the most dwelt-upon theme was, to "keep the colonies always strong," claiming that in this way the best success was to be attained. Then it was advocated by some that, if we put on the supers of unfinished sections left over from the previous season early, it would start the bees to working early, thus securing the first white honey which comes in. Others, living in a section where mustard abounded, to an extent of hundreds of acres being yellow with this bloom in the grain fields, as far as eye could reach, said, this would not answer, as this mustard honey would be mixed in with the white honey from raspberry and white clover to the spoiling of the whole; or the bees might carry up from the brood-nest some of the buckwheat honey stored the previous season. It would be better, said they, to put on extracting supers at first. This started the bees to storing honey in the supers, and, as soon as the danger from dark honey was past, the extracting supers were given to the weaker colonies, that were to be run for extracted honey, and sections placed on the colonies from which the extracting supers had been removed.

The "always strong men" argued that, no matter from what source the honey came, the bees would be on hand to work on whatever flowers bloomed. But it was found by close observers that, with the growth of a colony in numbers, as the season advances, in a stage of this growth, when the age of the field bees and their numbers as compared with that of the nurse bees, and when the period of egg-laying was at the

right stage, there came a time when the condition of the colony enabled them, as a whole, to take advantage of any certain honey flow so as to bring the most profit to the apiarist. If this condition is brought about too early, it is as disastrous as to have it arrive too late. The colony that is very populous early in the season (a colony that will just suit the raspberry man), has passed its prime when the basswood comes on. The man who produces basswood honey prefers a colony of moderate strength early in the season, one that will gradually build up and be in "full bloom," when the basswood is in a similar condition. The most practical beekeepers of the twentieth century have arrived at the conclusion that, to meet with the best success, we must raise our bees with an eye toward the main harvest of honey in our locality; that we can have the maximum amount of bees on hand just at the right time, so that countless thousands may work with the proper energy and zeal, having their whole "thought" absorbed in amassing as much as possible of that harvest into the supers and hives while the flow is on.

If the main harvest comes early in the season, as does raspberry and white clover, then bend every energy to bring the bees up to countless thousands, with energy and zeal to meet that early flow. If the flow is from basswood, then work for that, by holding them back a little the first of the season, but "rushing" them a little later. If from buckwheat, or fall flowers, hold them back still later in the season, and equalize, till finally all are brought up to the countless thousands with energy and zeal, just as the flow from buckwheat begins.

In my locality, there are no conditions which I know of where it pays to have strong colonies during the whole season. If any have a location which furnishes a continuous nectar flow from the blooming of the pussy willows and soft maples, in the spring, till frost cuts off the supply in the fall, then, possibly, the working for strong colonies during the whole of this continuous season might be made to pay, if the swarming fever was not brought about. If so, then a certain time of "hold up" would be necessary, or many colonies would spend their strength thru a desire to swarm, rather than having an energy and zeal for amassing honey.

But from my multitude of correspondence during the past half-century, and from reading of the bee papers during that time, I am led to believe that, even in the most "drawn out" locality, there are times when double the flow of nectar comes from some one or more sources of bloom than at other times. And where this is the case it well pays to have those countless thousands on

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hand at that time, rather than have a lesser number at all times.

With the above, comes the necessity for each **individual** beekeeper to have a thoro knowledge of just the source from which all nectar comes. It is all right to read and consider the experience of others, but each man or woman must thoroly understand the conditions of their locality, and govern themselves accordingly, before they can hope for the best of success.

Borodino, N. Y. G. M. Doolittle. —

[It is with regret and sorrow that we have to announce to our readers that we have now printed the last of the "Conversations with Doolittle." A half dozen of these, prepared by Mr. Doolittle before his death last June, have appeared in Gleanings since the famous beekeeper completed his earthly labors. But the pen has now dropped from the lifeless hand, and he will appear no more in these pages save as a quoted authority and memory.—Editor.]



A LIFE BEAUTIFUL

A Tribute to the Late G. M. Doolittle by a Pastor and Close Friend

Nineteen years since I began a four years' pastorate in the Methodist Episcopal Church at Borodino, N. Y. This is a rural hamlet credited with a population of about 150 people. One of the first men whose acquaintance I made was G. M. Doolittle. He lived a mile distant and was connected with a Baptist church a little farther on. I had met him and learned of his standing as a beekeeper and writer on bee topics while I was located on an adjacent charge a few years before. We took to each other as congenial friends and brothers beloved. The friendship has lasted. For 15 years I have seen neither place nor people, but have kept in touch with him by correspondence. He was large in body, mind, and soul. Without offspring, he reckoned himself indebted to humanity to the extent of the good he could do. One of his quiet kindnesses was support of a crippled English widow. He proposed to the town board to meet half the expense of her keeping instead of allowing her to be sent to the poorhouse. The board failing to meet the suggested half, he paid her board in the home of a widow who needed a companion. His wife was lame from childhood. His courtship was discouraged by his friends. He replied that he liked her all the better for her misfortune. It was always told that he never gave her an unkind word, and that it was his custom to prepare and serve her breakfast. Six years ago she had a shock of paralysis. Since then he had cared for her as a child.

My first conversation with Mr. Doolittle followed a funeral service at which I had spoken on the subject of immortality. He expressed his appreciation, and said: "Call on me next summer, and I will demonstrate its truth from the inside of a beehive." I never went there for that purpose, but often called, usually finding him in fit weather with his bees.

The main part of the farm on which he was born had been sold. He retained 20 acres, most of which was covered with a basswood grove, for a windbreak. There he built his needed buildings, together with a house for his mother and maiden sister. Here he had his queen-breeding establishment, consisting of about 60 colonies or nuclei. Three miles distant was his out-apiary used for the production of honey. I often found him manipulating the queen-rearing nuclei. He would get a veil for me, and together we would visit. He could demonstrate and explain the work as well as do it and write about it.

It was unpopular in Borodino to hitch horses to posts on the street. So, on his daily visits to the postoffice, his horse was driven into one of the sheds back of the church and parsonage. Our mail went out at noon, and I knew when to look for him—from 11 to 11:30 a. m., in time to mail the day's quota of queens. He claimed one-fourth of the business of the local postoffice, while it was locally conceded to be one-half. He often told me that he sold all he could produce by advertising one-half the year in Gleanings.

I could say much, as my heart dictates, about him as I knew him—cheerful, friendly, capable, successful, public-spirited, spiritual, good, true—one of God's noblemen whose presence was a constant proof of the immortality of the soul.

Akron, O.

R. E. Huntley.



REMARKABLE WINTERING EXPERIENCE

Bees With Lots of Ventilation Wintered in a Wet, Frozen Cellar

Dr. C. C. Miller's remarks on temperature in the cellar, page 667, November Gleanings, makes me think that perhaps my experience might help to decide which was more important, fresh air or temperature. Last year I sold the farm expecting to move into the village. When I was ready to move there was not a vacant house in the village, so I rented a place a mile out. I moved my bees into the cellar of that house on Nov. 15. Soon afterward the weather turned cold and to my astonishment froze everything freezable in the cellar. Apples and vegetables were frozen solid, and nothing entirely

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thawed out until April. Water during a February thaw came into the cellar to a depth of several inches. In about three days it again turned cold and the water froze so I could go to any part of the cellar on the ice. After the freeze I covered the bees as well as I could with robes and rag carpet. The bees were in the middle of the cellar on boards about three feet from the cellar bottom. After the water and ice got into the cellar it was so very cold and damp I thought nothing could live there, so I left the door leading from the kitchen directly into the cellar open the most of the time. It nearly froze me and didn't seem to change the air of the cellar much, but I was determined those bees should live if possible. The result was that I put seven swarms into the cellar and took out six alive. The one that died was weak when put into the cellar. Two of the surviving colonies were weak but built up. I now have 14 swarms ready for the cellar, and sold \$74 worth of honey this season.

Now, as to ventilation: When the wind blew, one could feel the air stir anywhere in that cellar and thruout the house. So the bees had plenty of fresh air. When I first had bees, I kept them in a large cellar, with little or no loss, usually no loss at all, but I always filled the room next the cellarway with fresh air, then opened the cellar door.

Last winter my bees were the quietest I have ever known them. Not a sound from them much of the time, but if I would give a little tap on the hive there would be an answering buzz. I have noticed when the bees were buzzing loudly in the cellar of my former home, if I would give them fresh air, they would almost immediately quiet down.

Eva A. Brown.

West Chazy, N. Y.

[We can't explain how your bees wintered under such very adverse conditions. It seems almost miraculous. We certainly do not advise any one to try wintering in such a cellar or any cellar at all like it. Dr. Miller very perhaps give us his views on this very exceptional wintering incident.—Editor.]



INDIVIDUAL-HIVE WINDBREAKS

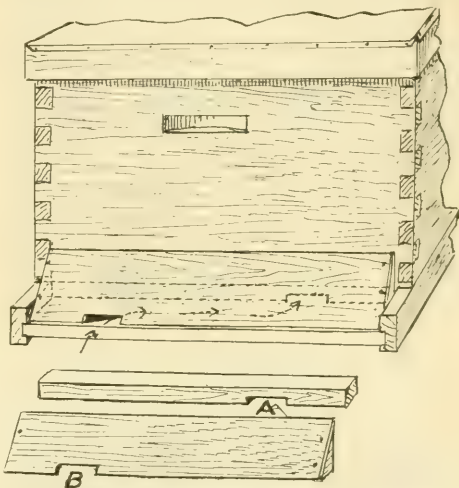
A Device for Use at the Entrance Which Stops a Wind Blast

Recently J. F. Kight of Indianapolis, Ind., called on us. He brought with him a little device to attach to any standard Doolittle or Langstroth hive to shut out the piercing winds during winter, late fall, or early spring. It consists of two parts—one an entrance-contractor, as shown at A in the illustration; and the other is a sort of storm-door, with the entrance B on the opposite side of the hive. The bees pass in at B,

turn to the right, and enter the hive at the contracted entrance A. A cold piercing wind, while it could get into the hive, is broken by the detour in such a way that the bees are not chilled.

Some years ago we tried a scheme in quite an extensive way by leaning a board up against the entrance. The bees on emerging from the hive would pass out at the ends of the boards; but we found in late fall that the boards confused the bees, with the result that many of them did not get into the hive. A stormdoor like this, if used at all, should be placed on the entrance in early fall, so that the bees will get used to it. It may be left on all winter and until late spring, when it may be removed to provide better ingress and egress.

It is important to have the front of the stormdoor flush or even with the alighting-board. It is important to have the entrance



Device for hive entrance to stop the admission of wind blasts.

fixed in such a way that there will be no ledge or projection to catch snow and ice.

Mr. Kight's idea is shown by the illustration looks as if it might be a considerable help, especially to colonies that do not have a suitable windbreak. This form of storm-door is only another form of windbreak; and perhaps the question might be raised whether a large, high board fence would be necessary when individual stormdoors or windbreaks are used. The purpose of the high board fence is two-fold—to prevent cold air from shooting into the entrance, and also to prevent a cold wind from striking the sides of the hive. When a cold wind strikes the side of a house, notwithstanding no air can penetrate the windows and doors, it takes more heat to warm the house. The same principle applies especially in the case of a hive. A cold atmosphere when the air

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is still will not penetrate thru a hive wall as will a higher temperature accompanied by wind. A stiff blow at a freezing temperature carries away the heat generated by a colony of bees much faster than a still air down close to zero.

E. R. Root.

Medina, O.

MURDEROUS JAPANESE HORNETS

In His Own English, a Japanese Beekeeper Tells of Their Destructiveness

Being a reader of Gleanings since the years before, I feel very happy to be so. I think you will take the attention of the beekeeping in Japan, and am sure you would like to do.

Yesterday, the September 19th, my bees are attacked by hornets. I am sending specimen of the same (queen and worker hornets) in this cover, I will tell you of Japanese hornets, the greatest bee enemy in Japan. They are, indeed, the worst dreaded enemy of our bees in our country here, altho I do not know if hornets or wasps do not great damage to your bees in your country.

May I tell you of the fact that if one or two hornets come into our apiary and attack a hive of bees which come out of the entrance to guard, until the whole bees of the hive are killed or badly wounded? There is no fighting between the two, altho there are many crowding bees in the entrance. Because the hornet is so strong, it never minds the bee's sting or jaw. In the most case,



Picture of terrible Japanese hornets, showing size as compared with Italian honeybee. About one-half size

after 10 or 20 minutes, our loving bees of the hive are wholly destroyed and ruined, altho the hornet can not get thru the narrow hive entrance. So doing, they come our apiary from August to November, day by day. So it is the most dreaded enemy of Japanese beekeepers.

Yesterday morning, about 8 a. m., I went to my bees in the back yard. There were four hornets upon a hive. A hundred bees were wounded and killed. Instantly I hit down them with wire-racket which I made

as hornet-hitting racket, and killed them, cutting off the head. I came back to my work in the house. Nextly, about 10 minutes after, I went out to see the bees. There were two hornets upon another hive. About 50 bees were killed. I hit down hornets all. Then I determined to be standing in the yard till evening, and so I did. Hour after hour? No! minutes after minutes the hornets came. I hit them all; and upon the sunset I counted 40 of hornets' heads.

I ask if you will kindly tell me of the hornet in your country. Do they never such damage for your bees? I would like to have an opinion from you and your fellow beekeepers on them.

Yasuo Hiratsuka.

Tara, Gifu-ken, Japan, Sept. 20, 1918.

THE PRICE QUESTION AGAIN

Harm Done by Those Who Sell Small Amounts of Honey Irregularly

An article under caption, "The Eternal Price Question," in the October Gleanings, impels me "to speak in meetin'." It occurs to me that your correspondent, Dr. A. F. Bonney, is like those farmers he mentions "as having started." He has made a start, but has need to go farther than he has yet gone, if he really wants to settle the price question, and put it where it shall cease to trouble the producer of honey. Whether he be a large or a small producer, makes little difference. The same person is rarely, if ever, both a large and a small producer of the same article at the same time.

Usually the large producer gets a better price for his product. Why? Not because he has more honey to sell than his neighbor, or a better quality perchance, but because he doesn't attempt to retail his honey at wholesale prices. If asked "what is wholesale price," his reply would be "the prices quoted by wholesalers to retailers." And just there is where many producers make their mistake. They do not consider even when they have only a small lot of honey to dispose of that by retailing it at wholesale prices they are not playing the game fair. The price does not depend on location half so much as on the salesman and on the general market value of the product, which is established and maintained by the jobbers and those who know the market's needs.

After several years' experience on the road as a honey salesman, selling hundreds of cases every month in the year to wholesale and retail trade, I am quite sure there is no one thing more demoralizing and which interferes as much with the sale of honey in certain localities as the attempts of some producers to dispose of a few hundred pounds of honey which they happen to have.

FROM THE FIELD OF EXPERIENCE

They fail to realize that if honey is to become popular enough so that it will pay them as well to keep bees as hogs, it must be available to the consuming public thru the regular channels of trade, so that people may procure it whenever they want it.

People buy and pay good prices for what they think they want these days. Making the public think they want honey requires hard work by experts.

Your problem will be solved if you follow this simple rule: When wholesaling, sell at wholesale price; when retailing, sell at retail price, remembering that in spite of the socialistic propaganda both the wholesaler and retailer are a necessary part of our modern civilization.

Yours for more and better honey,
A. S. Brown.
Warren, O., Nov. 1, 1918.

HOW LARGE A HIVE ?

Queens More Prolific Than Formerly; the Jumbo Hive Very Satisfactory

Referring to hive sizes, as mentioned in the editorial on "Bigger Hives and Colonies" in September Gleanings, keep clearly in mind that it is **brood-chamber capacity** that is the real point at issue. With the present supering system there is ample opportunity to expand or contract the storage room, therefore, so far as hive capacity, brood and surplus combined, is concerned, every modern hive is elastic. Not so with the "long idea" hives. They must at the beginning be made to meet the needs of the "locality." Their merits and demerits we will leave to their friends. Capacity of brood nests is affected by shape as well as size and greatly by **comb quality**. Do not forget this. Shape and proportions of length, to width and depth, have been threshed over most thoroly. Deep hives, shallow hives, and wide hives all have their advocates. There are two points of view as to brood-chambers: one that of the man who wants more or less frequently to expand or contract them, which he does by giving or removing extra chambers; and that of the man who wants something which is right all of the time.

It may be asked why this matter of hive sizes has arisen now? Because our queens have outgrown our present hives. I think it is quite evident that the run of Italian queens today is considerably more prolific than were the queens of 20 to 30 years ago. But be this as it may, there is certainly an increase in the practice of expanding brood-nest capacity, either by giving two bodies or by giving the queen access to a super, both of which practices have drawbacks. Both increase the capital necessary, both double the number of frames to be handled,

and the super plan introduces that vexation, two sizes of brood frames.

An alternative is to use larger brood-chambers, either wider or deeper. To use wider makes useless all present supers, excluders, escape boards, floors, and covers. Even that quarter inch added to the width in the last few years has been a costly nuisance. To make deeper only demands new brood frames, for hive bodies may be pieced down quite readily.

There is little in the way of hives which I have not tried as to shape, size, and protection. For a long time the Quinby (or Jumbo) seemed much too big for our moderate flows, but in recent years a careful comparison of results with it and with L's in the same territory, has caused me to change to the Jumbo entirely, the L's being used for extracting supers. I have stuck to the standard 16-inch width and use nine frames in a "10-frame" hive with a 1½-inch spacing and a ¾-inch offset of the outer combs from the hive sides. The offset is very valuable. The results are the most satisfactory of anything I have encountered in beekeeping in many years. I would not change a single point in them.

Arthur C. Miller.

Providence, R. I.

A BRITISH COLUMBIA BIG RECORD

One Colony Filled Nine Supers from Fireweed and Did it in a Hurry

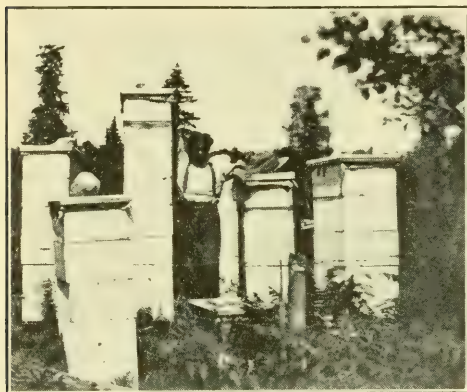
I enclose to you photo of a "stack" of supers from the apiary of W. H. Turnbull, about 20 miles from Vancouver. Mr. Turnbull is standing in the middle of the picture. He is young in beekeeping years, but is already one of the most practical and successful beekeepers of this country. The first supers of this lot were put on July 3. Up to that time all were in single-story ten-frame L hives, the season's outlook being very discouraging; but welcome showers and warm weather, so essential to nectar secretion, made a great change. From that time (July 3) two ten-frame supers, partly foundation, were put on the highest "stack" and filled about every week. The lot was taken off and extracted on Aug. 10. The highest stack, seven supers, yielded 304 lbs. of honey. The entire yield from every hive was from fireweed. Since Aug. 10 the high-record colony has filled two full ten-frame supers additional, making nine for the season.

You will notice that there is no excluder. The surplus supers were put on just above the brood-chamber in every case, which, as I have stated, was a single ten-frame hive, and were filled so quickly as to completely prevent the queen from working above, a circumstance which is unusual in British

FROM THE FIELD OF EXPERIENCE

Columbia, as the flows are generally slow and the queen goes to the top story unless confined below by an excluder.

Looking closely at the photo on Gleanings cover for August, it shows that on the bottom-board of the tallest stack is a Danzenbaker, next a ten-frame L. with excluder, and on top of this another ten-frame with another excluder above, leading one to be-



They have some big honey yields away up in the northern country of British Columbia.

lieve that the surplus above is the work of two queens, or properly, two colonies. If this is correct, the record is not remarkable. Another hive in the photo shows two excluders, and if this view is correct, I am curious to know where is the advantage. It is, however, a creditable showing.

When it comes to building "stacks" of supers we of the virgin Northwest are not to be outdone by the "effete East." But do not pack up and move here to keep bees, as climatic conditions are not often favorable and low averages are the rule; but complete failures have never been known.

W. H. Lewis.

Edmonds, B. C.

ANOTHER POINT IN ITS FAVOR

Demuth Winter Case Greatly Diminishes Heat Loss at Bottom of Frames

I have taken great interest in the apparent practicability of the Demuth case. All the points of advantage have been well set forth. However, there is one point which seems to me most apparent, and which has not been touched upon particularly. This is direct radiation from the bottom of the frames thru the entrance, which is the cause of the greatest loss of heat in any hive in any system of wintering. It appears to me that, whatever the size of entrance, the bottoms of the combs are directly affected by the changes of outside temperature,

and especially by the direction and velocity of the wind (currents of air). If a colony is wintered in a 10-frame hive, there is an area of radiation at the bottom of the combs 18 by 14½ inches (261 square inches). If the colony is contracted to seven frames (in the horizontal position), the area of radiation directly affected by the entrance is 10 by 18 inches, or 180 square inches, amounting to nearly 31 per cent saving of heat radiation. When wintered under the Demuth system on seven Hoffman frames the self-spacing device gives added protection, reducing the area of direct exposure of the combs to about 6 by 10 inches, or 60 square inches at the bottom end of the seven frames—an advantage of a reduction of 77 per cent radiation compared with the ten frames, or 33 1/3 per cent reduction in relation to seven frames in a horizontal position. In presenting this argument I purposely have not considered the advantage of the increased height of the chamber and its proportional advantage.

The above figures, it appears to me, fully account for any advantage that may be experienced by the use of the Demuth system of wintering bees.

Winthrop Filleherin.

Kingston, Mass.

[Your point with regard to the Demuth case having a relatively small amount of bottom exposure is well taken. Of course, we all realize that the bottom of any hive will necessarily be the coldest part of that hive. But we have never made so careful an estimate along this line as you have done. The smaller the bottom is relatively, and the deeper the room, the better for the bees.—Editor.]

TWO CROPS FROM ONE SEEDING

Beekeepers Will be Interested in this Man's Handling of Sweet Clover

My success with sweet clover and barley this year ought to point a way to beekeepers how to have a big nectar-producing crop of sweet clover, as well as a big field crop. In April I seeded at the same time to barley and sweet clover an eight-acre field. In July the barley crop was harvested. It yielded 40 bushels to the acre. In October the first cutting of sweet clover was secured, which yielded 20 big loads of choice hay. Next year I can reasonably expect from this and another 10 acres of sweet clover, which I am now pasturing, enough to fill a 14 by 40 foot silo with silage the last of May, and to yield a crop of seed in September and leave the soil in prime condition for bumper corn crops the next two years.

Who can beat it?

Henry Stewart.

Prophetstown, Ill.

R. E. NEW-
comb re-
ferred the
matter of cane
versus beet sug-
ar to the head
of the Chemical
Department of
Oberlin College.
The professor
gave quite a talk about it before the class.
"He said that almost every one believes
that beet sugar is in some way inferior to
cane sugar, but that there is absolutely no
difference between pure cane and pure beet
sugar; that there is no physical or chemical
difference between highly refined cane and
highly refined beet sugar, no more difference
than there is between iron from Michigan
and iron from Ohio after all the impurities
and compounds have been removed. He said
that I need have no fear about giving beet
sugar to bees."

Coming from such a source, that state-
ment should be authoritative. But our Brit-
ish cousins, who insist that beet sugar is
not proper winter food for bees, may reply
something like this: "The professor is
quite right. The sugar, when perfectly re-
fined, is all the same whether from cane or
beets. But has the process of refining yet
reached that state of perfection in which
beet sugar is left entirely free from injurious
impurities?" Well, perhaps it makes little
difference what the beekeeper thinks; when
he buys sugar the chances are that it is from
beets, whatever he may think he is buying,
and tons of beet sugar have been fed bees
for winter without disaster. Possibly Yankee
refineries have achieved the impossible.

* * *

Interesting is the difference in results
when queens from European foul brood col-
onies were given to healthy colonies, page
663, November Gleanings. With the Klab-
buhns, always bad; at Medina always good.
Why? Were the Medina bees immune, the
others not? Of course, there is the possi-
bility at which Mr. Root hints, the possibi-
lity of infection from neighborhood diseased
colonies. In the uncertainty of deciding
one is inclined to consider the probability or
possibility of a queen carrying the disease.
Is European foul brood not a disease of the
brood, never of the mature insect? If so,
the queen couldn't lay diseased eggs, and the
only way she could convey the disease would
be by carrying diseased honey. But she
doesn't feed larvæ. Neither does the queen
feed workers; workers feed the queen. How
then could the queen carry the disease? Un-
til queens are found to carry the disease
in a locality where there is no disease with-
in a certain distance, it is probably safe to
say that the Medina bees rather than the
bees of the Klabuhn brothers are the ones
to rely on.

* * *

Thanks, Mr. Editor, for the peep behind
the scenes you give us on page 650. Miss

STRAY STRAWS

Dr. C. C. Miller

Iona Fowls, I
bid you a belat-
ed, tho very
hearty, welcome.
I'm sure your
presence will be
helpful, and I
commend to your
especial care the
chap who has
trouble with his language. But, Mr. Editor,
don't you see you have made it a bit em-
barrassing for me? After this when I want
to "sass" the editor, how am I to know it
isn't a woman at the other end of the line?

* * *

Belva M. Demuth, on page 658, speaking
of my cellaring bees, you say: "In most
cases the records indicate that the bees had
a good flight the day before being carried
into the cellar." Please let me say the
same thing in a little different form by say-
ing that in most cases the bees were carried
into the cellar the day after having had a
good flight. You're right in saying that I
haven't regretted putting them in too early,
but have regretted putting them in too late.
And yet that hardly expresses it correctly,
for it was not really the lateness I regretted,
but the number of days the bees were left
out without a flight just before being put
in the cellar. The later they are put in the
better, if that lateness gives them another
flight, so that they can go into the cellar
with empty intestines. The point is that
one day outdoors in adverse weather unfits
them for enduring long confinement perhaps
more than a week of confinement in the fa-
vorable conditions of the cellar. As it is
desirable to have them go into cellar well
emptied, the rule is to take them in the next
day after their last flight. The trouble is to
tell in advance when the last flight may be.
It may be in November, and it may be in
December. Who can tell? Well, suppose
they have a good flight the middle of No-
vember. They may have a flight later, and
they may not. I think I'd chance it to take
them in. If no warm day comes later, I'm
all right. But suppose there comes a day
a week or two later, or even a month later,
when they could have a flight. I console my-
self by saying that these extra days of con-
finement in the cellar have done little harm:
they were in good condition to stand the
whole winter anyhow; and if I hadn't taken
them in the middle of November, there
might have been no later flight, and then
I'd have been in a box.

* * *

In feeding sugar syrup without any mix-
ture of honey, shall tartaric acid (a level
teaspoonful for every 20 pounds of sugar)
be used or not? Some, as The A. I. Root
Co., say they have no trouble without the
acid. On the other hand, there has been
report of the syrup granulating even when
acid was used. Possibly the thickness of
the syrup has something to do with it.
Wouldn't a very thick syrup have more need

of acid? That raises the question as to the proper thickness for late feeding. Of course, all agree it is better to feed thin syrup, and not feed too late. But for late feeding what? Root's A B C and X Y Z says two and one-half parts sugar to one part water. Dr. Phillips says two parts sugar to one part water. I have fed a good many pounds of sugar—for which I hope I may be forgiven—always two and one-half to one, and there seemed no objection. I always used acid with it. But it is better to use no acid and use honey in the syrup, the more honey the better. [We have fed quantities of syrup late in the fall, using two parts of sugar to one of water, with no honey or tartaric acid, and have had no trouble from granulation. When feeding a thicker syrup than this, we have used either tartaric acid or honey (that we were certain came from healthy colonies). Take two bottles of this thick syrup, one containing tartaric acid and one without it, and notice the difference in rapidity of granulation. A few days will tell the story.—Editor.]

* * *

J. L. Garner sends me from Texas a sample of an important honey-source in his region, which he says furnishes so much that there are not enough bees to gather it. I don't wonder when I see it solidified in large crystals of rock candy on the leaves and gall apples from the live oak. One could hardly imagine that the crystals could be so plentiful.

* * *

I read aloud what Stancy Puerden says, page 669, about using for soup the chicken bones left on the dinner plates, and then waited for a protest. None was forthcoming, so I ventured, "I'd hardly go as far as that, would you?" "Um-huh," said my wife complacently, quickly adding, "If I knew my crowd." I accepted the amendment

* * *

After reading The British Bee Journal of Sept. 26, I should have made a vigorous effort to secure a supply of seed of *Echinops sphaerocephalus*, if I had had no previous experience with the plant. A Harwood, in an interesting series upon bee plants, says of this plant, "No bee plant that I have ever grown was so attractive to the bees. Whenever the weather was favorable the heads were crowded. I have counted 14 or 15 bees on one at the same time."

This is the Chapman honey plant that had a big boom in this country a number of years ago, but is not heard of now, and is not included among honey plants in the bee books. Upon its introduction I planted quite a patch of it, and like Mr. Harwood I never saw bees so thick upon any other honey plant. But close observation showed that the bees were not in eager haste in their usual way when getting a big yield, but were in large part idle, and it looked a little as if the plant had some sort of stupefying effect upon them. At any rate, I

should not take the trouble to plant it now if land and seed were furnished free.

* * *

Mr. Editor, I said on page 666 that if you would say that more than one colony out of every hundred had skyscraper piles over them I would climb down. You have made no categorical answer to my implied question, but what you say on page 658 makes me now think that I was talking about something of which I knew very little, and of which you knew a great deal. Mr. Editor, I climb down with my humblest apology. Some day I may become wise enough to learn that "fools rush in where angels fear to tread."

* * *

Editor Townsend says in Domestic Beekeeper: "It has become a habit with us to sell early, and we have usually done well by so doing, but during the last two years a new condition has confronted the honey-producer, and the one who has held out longest has secured the best price." It might be a bad thing if all should agree to sell early, or if all should agree to sell late. Throwing all the honey on the market at one time, whether early or late, would have a tendency to depress it. But it will help no little, if there be some organized understanding as to what the price should be, whether early or late. This year I followed the advice of the committee of the Chicago and Northwestern, and sold at retail at \$1.60 per 5-pound pail. It seemed like a pretty big price; yet it never went more promptly, and I've no doubt it would have gone nearly as promptly if I had asked \$1.75. But \$1.60 is a plenty.

* * *

After further experience, I think I can recommend sending extracted honey by parcel post. All I've sent has been in 5-pound pails with no packing whatever, the address written on a white space that happened to be on the label. So far as I've heard, it was all received in excellent condition, including a pail sent to Massachusetts. On this latter pail the postage was 38 cents, insurance 3 cents, war tax 2 cents, making the pail cost the consumer \$2.03, or a fraction more than 40 cents a pound. Rather expensive, but the customer seemed well pleased.

* * *

That talk about wasting valuable time at conventions, page 649, is excellent, Mr. Editor. You might also have added a word against cutting time out of the sessions to make a visit to the knitting factory, or whatever it is that's the particular pride of the locality. Committees, as you say, can save the time of the convention, but here a caution is needed. I recall a convention where a committee was kept occupied thru practically all of a half-day session of the convention. Some of the best men there were on that committee, making it a half-day lost to them, and their absence was a distinct loss to the convention. Let committees meet between sessions.

ISN'T there some mistake in regard to the cost of a winter case to be made in panels as described on page 652 of November Gleanings? The Editor

says the cost would be about \$3.00 per case, less than an eight-frame hive, catalog price. Well, hereabouts, the lumber, nails, etc., would cost three dollars or near it, to say nothing of the labor of making. [It would have been a little more accurate, had we said three dollars per colony. The actual cost is between nine and ten dollars per case.—Editor.]

* * *

"The person who keeps two or three colonies in first-class condition and gets full results is just as good an apiarist as one who keeps more bees and takes no better care of them," says Hamlin Miller, page 674—a fact worth remembering.

* * *

M. C. Richter of Modesto, Calif., on page 673 advises members of the California Honey Producers' Co-operative Exchange to order their supplies of the Exchange early, as prices are likely to advance. Now this is just as good advice for those in other sections of the country who are not members of any exchange.

* * *

The experiment related by H. H. Root on page 663 is of more than usual interest. To introduce 37 queens from colonies badly infected with European foul brood into two- and three-frame nuclei and not have the disease appear, would seem to be almost conclusive proof that this disease is not transmitted by the queen. Had these queens been black queens, I should feel sure that this disease was never transmitted in this way.

* * *

Some three thousand years ago, a writer told us, "there is nothing new under the sun"; but if he had lived in our day and read the title of an article by E. R. Root in the November number of Gleanings, "Sky-scraper Beekeeping," he would have rubbed his eyes and said, "What is that?" And some of us old beekeepers feel much the same way. Is it true that we have not been getting much more than half the honey we might with better hives and better management? It is a subject that will bear looking into and investigating very carefully. If 45,000 pounds of honey can be taken from 300 colonies, it is certainly much more profitable than to take 30,000 pounds from 1,000 colonies. I propose to try to see what can be done with a few colonies first.

* * *

I am sorry to disagree with so good an authority as Belva M. Demuth, but she tells on page 657 that when there comes a nice warm day in November, 'The clusters

SIFTINGS

J. E. Crane

then unfold completely, and probably every bee except the queen of each colony goes forth into sunshine before the flight ceases."

Now this is ideal, and just as we would like to have it, but I doubt if it is true in the far North. I watched very closely last autumn, but saw no day when it looked as tho half of the bees flew out. There were days when some colonies flew freely, and other colonies flew some; but there was no wholesale flight such as she describes. [In this respect there is considerable difference between Maryland and Vermont. Whether every bee might fly would depend partly, no doubt, on the lateness of brood-rearing.—Editor.]

* * *

The use of a single hole for winter is a capital idea, as given on page 653. Where a hive has a large entrance, it can be easily made into a single hole by closing with a couple of blocks, leaving the hole in the center. I have used double-walled hives for nearly 50 years, and for the last 25 years, I suppose, I have used a hole in the front of the hive above the bottom entrance to prevent the entrance getting clogged. This hole I made by boring with an inch bit thru the outside case and brood-chamber and inserting a tin tube, thus making the entrance about $\frac{7}{8}$ inch in size. This has given me entirely satisfactory results. During severe winter weather these holes will be almost completely closed with frost, that, as soon as the weather moderates, melts without harm to the bees. Of course, we make the lower entrance very small, and, if it gets closed with snow or ice or dead bees, it matters little as there is an entrance above, that is always open if it is small enough. A curious fact about an entrance above the bottom of the hive is that during the spring and summer the bees seem to prefer it to the one lower down.

* * *

"Gleaned by Asking, Iona Fowls." Page 682. That looks good after what the Editor has said of Miss Fowls on page 651. It was of special interest to learn that Miss Fowls had served her apprenticeship in beekeeping in a poor locality or under hard conditions. How often it turns out that what seems a hard lot proves a blessing in disguise. How many beekeepers have we known that started in favorable years and were full of enthusiasm, but, when poor years came or disease broke out among their bees, were ready to give up, and we heard little more from them. Almost any one can succeed with bees in a good season. It is the tiding over the poor years where we most need help.

Thrice welcome will be Miss Fowls to the readers of Gleanings in Bee Culture.

USUALLY I thoroughly enjoy working on my copy for this department. So many readers have said or written such pleasant things of Our

Food Page that I have come to feel that it is my opportunity to send a message to thousands of friends scattered not only over every part of the United States but in many distant parts of the world, for kind letters have come from even far-away Australia and New Zealand.

But this month, for some reason, writing was drudgery of the hardest kind. The terrible influenza epidemic had cast such a shadow over our country that it was hard to realize that the sun would ever shine normally again, and I can never write when I am nervous and depressed.

This morning (Nov. 7) came the joyful news that our State of Ohio has at last gone dry. This afternoon, being unusually tired after a morning's work in the kitchen, I bathed and lay down near an open window to rest a few minutes before finishing my copy. Suddenly a whistle began to blow a long, continuous blast. Other whistles and bells took it up, and a locomotive shrieked shrilly. I lay still and wondered why they waited until afternoon to jubilate over the dry victory. And then my fifteen-year-old boy came in and told me the wonderful, unbelievable news, the news that the world had been praying to hear for more than four years. Even if the news was later officially denied as premature, we can surely look forward to a real Christmas with "peace on earth, good will to men."

We are often told that we are all creatures of habit, but I never realized the truth of it until this past year. There are people who can apparently with better grace give up their sons to fight than they can change their habits of eating. And the strange feature is that the sugar restrictions seem to be harder to endure than any others.

In midsummer, when the allowance of sugar per person for a month was three pounds, a housekeeper said to me:

"I do not see of what use it is for you to give out recipes for baking with the wheat substitute flours when there is not enough sugar for baking. I have not been able to bake cake or cookies all summer."

Later, when the sugar allowance was reduced to two pounds per person a month, another housekeeper said to me:

"I find we are actually buying more sugar on the two-pound basis than we did when we were free to buy all we wished."

There you have the two extremes, and I have quoted them because they are typical. The first housekeeper had a family of five,

OUR FOOD PAGE

Stancy Puerden



cereal and fruit."

The family of the other housekeeper used almost no sugar on the table and none in coffee and tea, and consequently even on the two-pound basis they could enjoy their desserts as usual.

One woman who kept a boarding-house kept her boarders from using their entire allowance on the table by the following ingenious scheme: she placed a jelly tumbler containing half a pound of sugar at each boarder's place at the table, calling his attention to the fact that the amount in the glass was his whole allowance for the week. Then she told the boarders that the amount left in the glasses at the end of the week, together with what sugar substitutes she could buy, would be used in making sweet desserts for the following week, and they could easily see if they were greedy with the sugar their desserts would have to be extremely limited.

An American, who has lived in Russia for the past 15 years, recently visited "The Home of the Honey Bees." He is now living in Cleveland, and being a lover of honey came down to visit the "sweetest town on earth," as Medina is sometimes called on account of the amount of honey kept in stock here. He told of the way the Russians have of sweetening their drinks. He said they place a spoonful of sugar or honey on the tongue and then drink the coffee or tea. If they drink a cup of coffee on the installment plan, as I do, they would use at least six teaspoonfuls to each cup of coffee. In that case a Russian hostess would probably say to her guest, "Do you take coffee with your honey, Mr. Blankski?"

Recently a Gleanings reader said she wished I would give the equivalent in sugar for the amount of honey called for in my recipes. She is fond of honey on the table, but, as her husband is neither a beekeeper nor a millionaire, she does not feel justified in using it in baking. If housekeepers will bear in mind that honey is approximately one-fifth water, they can substitute sugar for honey in any recipe. When you substitute a cup of sugar for a cup of honey omit about one-fifth of a cup of wetting.

There, I enjoyed answering that question because it afforded me an opportunity to casually speak of sugar as a honey substitute instead of the reverse.

Speaking of honey in cooking, another very pleasant subscriber, who recently called at the Puerden home, said he had with difficulty persuaded his wife to try making pre-

and when I asked her what she did with that 15 pounds of sugar which was her due she replied:

"We use it all on the table in tea and coffee and on breakfast

serves with honey, and that he liked the result very much, but thought the honey preserves were somewhat darker than those made with sugar. They need not be, if light honey is used and they are carefully made. It is wise not to cook a large amount of honey preserves or marmalade at a time for that very reason. Cook only enough to fill three or four glasses, watching it carefully and stirring it frequently to prevent it from darkening and acquiring that slight caramel taste which injures the delicate flavor.

For your Christmas candies try some of the following recipes and see if sugarless candies are not good. The Honey Fruit Chocolates are delicious and very easily made.

By the way, that "Honey Fruit Chocolate" recipe has a little history. A year ago the Food Administration sent me a leaflet of candy recipes, including one for "Parisian Sweets." It looked tempting on paper, but I thought it could be improved, so I tried it, altering it slightly and adding honey and orange juice. Later, when writing to the Food Administration on another matter, I enclosed a leaflet of some of my sugarless candy recipes, including the one which I had altered and rechristened "Honey Fruit Chocolates." This year their leaflet of candy recipes again includes Parisian Sweets, but now their recipe calls for honey and orange juice.

You would never detect the presence of vegetables in that Christmas pudding. It is especially tender, moist and fruity tasting. Serve it with a sweet sauce either hard or liquid. I published two recipes for pudding sauce in the December issue of 1917.

HONEY CARAMELS.

- | | |
|--------------------|--------------------|
| 1 cup chopped nuts | 1 teaspoon vanilla |
| 2 cups honey | 1 square chocolate |

Boil the honey and chocolate shaved fine to 260 degrees F. or until it forms a moderately hard ball when dropped into cold water, remove from fire, stir until it begins to thicken, add the vanilla and chopped nuts, and pour into a buttered shallow pan to cool. When nearly cold mark into squares.

HONEY FRUIT CHOCOLATES.

- | | |
|-------------------------------|-----------------------------|
| 1 pkg. seedless raisins | 2 tablespoons orange juice |
| 1 pkg. dates | |
| 1 cup figs | 2 tablespoons honey |
| 1 cup nuts | $\frac{1}{2}$ teaspoon salt |
| grated rind of half an orange | dipping chocolate |

Put the raisins, dates, and figs thru the food chopper, add the nuts chopped coarsely, the grated orange rind, the orange juice, honey, and salt. Mix well, form into balls, and set aside in a cool place until firm. Melt the dipping chocolate over hot, not boiling water, dip the fruit balls, and drain on waxed paper. If preferred, the fruit paste may be pressed into a shallow pan, cut in squares when cold, and wrapped in oiled paper.

CANDIED ORANGE PEEL.

Cut the peel in strips, put on to cook in cold water, let boil up and drain. Repeat the boiling four times, measure and add an

equal amount of honey, and let simmer until translucent. Drain and let dry over night.

HONEY POPCORN BALLS.

- | | |
|-------------|-----------------------------|
| 1 cup honey | also 1 2 quarts popped corn |
|-------------|-----------------------------|

Boil the honey to 270 degrees F. or until it hardens in cold water, pour over freshly popped corn, and mould into balls. These are best eaten fresh, as the honey gathers dampness and becomes sticky.

COCOANUT FRUIT SQUARES.

- | | |
|--------------------------------------|-------------|
| $\frac{1}{2}$ lb. desiccated coconut | sweet milk |
| nut | 1 lb. honey |
| $\frac{1}{4}$ cup currants | |

Cover the coconut with sweet milk and let it stand a few minutes. Put the honey over the fire and bring to a boil, add the coconut and the milk in which it was soaked, and cook all until it will drop from the spoon in a thick string. Add the currants which have been washed and dried and pour into an oiled tin. Cut in squares.

STUFFED DATES.

Use the best dates. Remove the stones. Stuff with any kind of nuts available, or peanut butter may be used as a filling. Press the dates in shape and roll in coconut, chopped nuts, or cocoa. They are also very good dipped in chocolate.

HUNKY DORY.

- | | |
|-----------------------------|---------------------------|
| 2 cups popped corn | 2 tablespoons sweet cream |
| 1 cup pecan or walnut meats | 3 cakes sweet chocolate |

Break the chocolate into small pieces and melt over hot water. As soon as it is melted add the cream, popped corn, and nuts. Stir quickly with a silver fork and lift out in small lumps. Place on waxed paper to harden.

CHRISTMAS PUDDING.

- | | |
|--------------------------------------|--------------------------------------|
| 1 cup grated raw potatoes | 1 tablespoon grated orange peel |
| 1 cup grated raw carrots | 1 teaspoon soda |
| 1 cup chopped suet | 1 teaspoon salt |
| $\frac{3}{4}$ cup honey | 1 teaspoon cinnamon |
| 1 cup raisins or dates cut small | $\frac{1}{2}$ teaspoon ground cloves |
| 1 cup currants | 1 cup barley flour |
| $\frac{1}{4}$ cup citron sliced thin | 1 cup white flour or more |

Sift soda, salt, and spices with the flour; and then mix the other ingredients in the order given, sifting in the flour last and using enough to make a batter as stiff as fruit cake. Steam in oiled pudding mold three to five hours. Serve with honey or a sweet sauce.

SNICKERDOODLES.

- | | |
|------------------------------------|------------------------------------|
| 1 tablespoon butter | 1 cup white flour |
| $\frac{1}{4}$ cup honey | $\frac{1}{3}$ cup barley flour |
| $\frac{1}{4}$ cup granulated sugar | $\frac{1}{2}$ teaspoon salt |
| 1 egg | $\frac{1}{3}$ cup seedless raisins |
| $\frac{1}{2}$ cup milk | 2 teaspoons baking powder |

Cream the butter and sugar together; add the honey, the egg, and then the milk and flour, in which the other dry ingredients have been sifted, a little at a time alternately. Last of all, add the raisins which have been steamed until tender.

Susie W. Merritt.

All measurements level.

IT was even more of a flow than we suspected, in our most suspicious mood—the honey flow this fall. Several local beekeepers extracted hundreds of pounds of autumn honey, which is very unusual here. "It has been the best fall flow I ever knew," writes one man of many years' experience. Every beekeeper smiles a satisfied smile when you mention it, unless you ask if maybe the queens might have been crowded some; then every one looks solemn and confides that that is the one thing to worry about. So we are all worrying together, quite merrily.

Fall offensive great success!

Wealth of booty won!

Armored aircraft bring us in
Heavy stores of Hon!

* * *

More than one kindly beekeeper has sent word that the plant mentioned on Page 608, October Gleanings, is Motherwort. Well, that was what we ourselves had several times tried to conclude, but always we evacuated that position when Gray's Botany opened up on us with the crushing statement that the Mint Family, to whose populous membership Motherwort (*Leonurus Cardiacæ*) belongs, has "many seed-like nutlets (never prickly)." Well, if I know a "seed-like nutlet" when I see one, or a prickle when I feel one, the nutlets of *Leonurus Cardiacæ* are prickly. But I'd much rather it would be Motherwort than anything else, because that was what I picked out first, from a certain gay little book that took no note of prickles. Can anyone reconcile them, the lore of the gravely detailed Botany and the prickly nutlets on my hollow-stemmed purple-flowering weed?

The famous Miss L. Cardiacæ

Has nearly got into a pickle.

Because an old family tradition

Forbids her to carry a prickle.

* * *

With the Editor's kind permission, I want to say that those dreaming hours in the last stanza of the verse on page 672, October Gleanings, grew not "green" but "deep"—"Grew deep and still and full of balm"—says the copy. Colorful hours they were, to be sure, but that line didn't happen to say so, and on that particular day they were not green but a shimmery sort of blue and gold.

Old Winter's hours are gray or white,

The Spring's a pale green hue,

The summer hours are mingled flowers,

But autumn's gold and blue.

* * *

Letters on winter packing continue to drop in. May I quote extracts from a few? "I built up six strong swarms, for which I bought Italian queens. One I put in my new protection hive, the rest (except one) were

Beekeeping as a Side Line

Grace Allen

in 8-frame hives. The one exception, which we will call No. 6, was in a box made of $\frac{5}{8}$ -inch sides and $\frac{7}{8}$ -inch ends, same dimensions as an 8-frame hive.

No. 1 I set inside an old chaff hive. Three of the dovetail hives and the protection hive I lost before their brood all hatched. No. 1 lived till March, had two good flights and died. No. 6 is still living, and can almost crawl out of cracks at corners. Why did the one with the very least protection winter so well, while those best protected died?" I wish I knew, Mr. Bauches. There evidently was some factor so important that it nullified the protection in the one case and the lack of it in the other. Which proves nothing as to the value of packing except that it is not a cure-all. It is not the only, nor perhaps the most important requisite for good wintering. But good wintering itself is of prime importance.

* * *

H. D. Murry of Ladonia, Tex., writes thus: "I experimented a little last fall myself, packing a number of colonies in this way: First, I placed a full-depth super under the brood-chamber, the super being filled with empty combs. I tacked a piece of burlap on the bottom of a super and placed that on top of the brood-chamber, with some sticks laid across the frames to afford passageway for the bees above the combs. I filled the super with planer shavings and put on the cover. The entrances were contracted to about two inches in width with the usual $\frac{3}{8}$ -inch depth. Every colony so packed came thru the winter in perfect condition. My loss of colonies not packed was heavy."

This upward ventilation was what gave us such good results last winter, tho we had never put the empty combs under the brood-chamber. Mr. Murry continues: "I think the beekeepers of the country owe a great debt of gratitude to our friends at Washington for what they have accomplished in clearing up the wintering problem. But there are many of us who will never go to the expense of making winter cases. Most of us are willing to put on a super of planer shavings. I'm pinning my faith to that plan till I am shown something better for Southern beekeepers."

A good proportion of our own hives are in either two stories or a story and a half. That gives the bees a chance to cluster well away from the entrance. But Mr. Murry's letter strengthened my previous intention to raise some colonies over bodies of empty combs. The brood-chambers—O joy and O grief!—were utterly heavy. I was almost completely out of commission after thus raising two colonies. It seemed too bad to tear the brood-chambers apart on so late and so cool

a day, just to avoid lifting them complete, so that particular manipulation stopped right there. But not far from Nashville there is a beekeeper who—no, I'll wait. He is tackling the wintering problem too earnestly to have any incomplete reference made to his plans. "If a little work and expense, providing protection, will prevent a recurrence of last winter's losses," he says, "there won't be any more in my yard."

* * *

At the Fair, a young Williamson County beekeeper told me he was going to try out the winter case this fall. So, little by little, the trials are being made—the ticket being scratched, as it were; tho by far the overwhelming majority of Dixie bees remain unprotected—a traditional solid South.

* * *

October brought to our home very serious sickness, and then the "Great Release," so preventing our own bees from receiving the attention this fall that I had planned. When these grave things come into our lives, beekeeping does become a mere side line indeed. We still hope to do certain things; it will be later than Dr. Phillips advises, but perhaps he would say not too late, as November usually has much warm weather.

Probably, it has been because of this new sad experience that the thought has been with me so often of late that whatever our side lines, or even our so-called main lines, life itself and the living of it, the quality of the living of it, are the matters of our deepest concern. We call ourselves beekeepers or doctors or soldiers or pilots or laundresses; but after all, these words grow out of what we do, not out of what we are. I remember having once heard a brilliant young woman break out in impulsive indignation because some one said that she was a writer and her sister was a teacher and her friend was a bookkeeper. "Those things are not what we are!" she protested; "they're just the labels fastened on us while we do certain things. We are something so much more than that—we're women. And for that matter, we're something so much more than that—we're human beings." It is somewhat true that giving us labels classifies us like specimens, for the things these labels signify are the things wherein we differ. And those are really our side lines, howsoever main finish they may sometimes appear. In the great curves of our lives we are very similar. We love and we aspire and we die. Babies and books and sunsets and wise old people and stars at night are precious things to all of us. We all revere holy thoughts and thrill to noble deeds, and we long to be ourselves both noble and holy. Courtesies and gracious manners go straight to our hearts; and one and all we are dreamers of high dreams and doers of what we hope are good deeds; and we all stand awed and uplifted in the presence of death. Truly beekeeping is but a side line, as are all pro-

fessions and occupations; only living is a main line.

And somehow today I feel no mood for side-line verses—nor, indeed, much mood for side liners themselves. So in the little verses that follow there are no bees at all. But is not all song, even that which only reaches out longingly toward the hem of Beauty's garment, and touches it not at all—is not all song of the very stuff of life?

* * *

CHRISTMAS DREAMS.

Christmas comes with all its dreams,
And I fold them one by one
To my heart until it seems
I have touched the stars and sun.

One dream is a great low star,
One a carol sweet and wild,
One a hill where shepherds are,
One a Mother and a Child;

Some are friendly dreams and near,
Stockings hanging by the fire,
Children's gallant shouts of cheer
When they find their hearts' desire;

Cities gay with crowds and light;
Folk who pass with noiseless feet,
Bundle-laden thru the night,
Down some dark and narrow street;

Soldiers in the far-off lands,
Under grey and leaden skies,
Home-sent letters in their hands
And the answers in their eyes;

Then the fairest dream of all
Glow again and yet again,
While the ancient carols call
"Peace on earth, good-will to men!"

* * *

THE AMERICAN HOUSEWIFE'S SONG.

[PREFATORY COMMENT: If Mrs. Puerden will allow me, I should like to echo her enthusiastic pleas for food conservation. While this verse stresses wheat only, not only I but every loyal American housewife feels the same way about sugar, fats, or whatever food stuff is particularly needed—"lest dreams, too, die."]

I may not ride a snow-white steed
With silken banners flying,
Or charge a wall so grim and tall
With soldiers round me dying;
But I shall make my war-time bread
And find it good to eat;
With corn and rye and barley, I
Shall save my bit of wheat.

Dear Maid of France, our woman hearts
Have not forgot your story—
We fight today another way
With lesser light of glory;
For we at home must save them there,
And send them food to eat
Or they shall die, so gladly I
Give up my bit of wheat.

For dreams of righteousness on earth
Heroic blood is flowing,
Shall lack of bread betray the dead?
Nay—keep the wheat-ships going!
And if the need still greater grows
Of daily bread to eat,
Lest dreams, too, die—then know that I
Will give them all my wheat.



FROM NORTH, EAST, WEST AND SOUTH



In Northern California.—Altho fair and warm weather prevailed during October, beekeepers were not benefited thereby. The month of September with its intermittent rains and cold weather definitely put out of commission our fall honey plants. Had October preceded September we would have had a very fair flow this fall. According to reports that have been received recently, I fear that not a few apiaries will be short of honey this winter and the following spring. September weather is responsible for the lack of stores, and, whether or not sugar will be available for spring feeding, we cannot as yet foretell. One of the members of the Central Valley Honey Producers' Co-operative Exchange is holding his honey crop for the express purpose of selling it for feeding purposes to members of the Exchange. It is dark honey and free from spores of American foul brood. Any member needing feed may address the secretary of the Exchange at Modesto. It might be mentioned here that last winter California lost thru starvation approximately 4,200 colonies.

Your correspondent has been requested to write a special article for Gleanings on bee-disease legislation. He hopes to be able to do this for the January issue. Unquestionably, this is an important and timely topic. Government statistics show that last year California suffered in summer losses thru disease (this does not include winter losses from all causes, which were nearly double the summer losses) over 11,000 colonies valued at over \$89,000. Furthermore, the rate of increase of summer losses thru disease from 1916 to 1917 shows a loss of 2,450 colonies valued at \$19,600. This indicates that our industry thru summer losses from disease alone is suffering a yearly increase in loss of nearly \$20,000, and that probably this loss, instead of remaining at about \$89,000 for the year 1918, will amount to \$109,000. When it is taken into consideration that our winter losses are almost double the summer losses and also the resultant loss of honey crop, it will be readily seen that the matter of an effective bee-disease law in the State is paramount for the protection of our industry. Our State Exchange will employ every means within its power to secure this much needed legislation.

The sugar requirements of soft-drink manufacturers on Nov. 1 were again cut in half, and the amount allotted now to such manufactures is but one-fourth that used by them in normal times. This brings up the question of sugar substitutes which may be used in replacing a part of the sugar in the bottling of soft drinks. According to the U. S. Department of Agriculture, Bureau of Chemistry, the following sweetening agents can be substituted for sugar: corn syrup (ordinary glucose), corn sugar, maltose

syrup, honey, and high-grade refiner's syrup. It is interesting to note the relative sweetening powers (excepting refiner's syrup) of the above-mentioned products. They are as follows: ordinary sugar, 100; honey, 75; corn sugar, 45; maltose syrup, 30; corn syrup, 20. It is likewise interesting to note that the Bureau of Chemistry does not recognize saccharin as a substitute for sugar. It possesses no food value and has been shown to be actually deleterious to health. It might also be stated that saccharin cannot be legally used in foods in the State of California.

M. C. Richter.

Modesto, Calif.

* * *

In Southern California.—The Riverside District Fair or, as it was called this year, the Southern California Fair, was held at Riverside, Calif., Oct. 8-12. For several years the beekeepers of Riverside County have made very creditable displays at these fairs. This year a special effort was put forth to get as fine a display as possible. In order to stimulate interest and draw in exhibits from outside of this county, a prize of \$75 was offered for the best display of bees, bee-keeping appliances, etc., put up by a county club. A second prize of \$50 was also offered. Some very fine exhibits were made by the neighboring counties. (See picture of exhibit on page 739). A generous display of comb honey, extracted honey, and hundreds of pounds of beeswax were part of the attraction. Riverside and San Bernardino Counties each had a miniature apiary in its exhibit, Riverside County also having a miniature man uncapping and extracting honey. A genuine, old-fashioned "bee-gum" in the nature of a log cut from an oak tree, containing a swarm of bees in their native state, was one of San Bernardino County's special attractions. About 25 ways of putting up extracted honey were shown to the 30,000 people who visited the fair. The first prize of \$75 went to the Riverside County Club, and the second prize of \$50 went to the San Bernardino County Club. Each of these county clubs should be highly commended for the efforts put forth. Demonstrations were given daily in front of the grand stand by A. C. Carpenter of Fallbrook, San Diego County. His special demonstrations were in preparing bees, queens, and pound packages for shipment. The Kinzie brothers, each with his own exhibit, and E. J. Atchley, all had good displays. The Kinzie brothers, especially, vied with each other with very fine displays of hives, bees, appliances, honey, and wax, together with canned fruit, preserves, jellies, and cooked food sweetened with honey. They also had a wonderful exhibit of mounted California honey-producing plants. Charles Kinzie carried off the first prize on bees and queens, and the



FROM NORTH, EAST, WEST AND SOUTH



other prizes were quite equally divided between the two brothers.

Many apiarists have already moved their bees to the locations where they expect to winter and in the spring make orange honey. Where there are eucalyptus and pepper trees enough to justify it, this is perhaps all right. If the winter is mild like the last one, the bees will be able to get considerable nectar and pollen from these trees. In some localities the bees stored quite a bit of eucalyptus honey last winter and built up splendidly for the early honey flow. Generally speaking, the late honey flow over most of southern California, upon which beekeepers depend for the bees to fill up the hives for the winter, was almost a complete failure this year. Consequently, many apiaries are very short of stores and will need considerable attention, as well as great care in the selection of a location, in order to bring them safely thru the winter.

Beekeepers from Idaho and Utah are securing locations and preparing to ship bees to the orange groves of southern California for wintering. They expect to raise early queens and make as much increase as possible, besides making whatever orange honey they can. It now looks as tho there would be from five to ten carloads of bees brought in this winter from those parts of the country.

No more rain of any consequence has fallen since the last report, and conditions remain about the same. I have lately visited the Yucaipe and Cajon Pass districts. The sections lie at an elevation of from 3,000 to 4,000 feet and are along the higher mountain ranges. They are usually considered good for a honey flow until late in the fall. But this year, owing to the scarcity of summer rainfall along these mountain ranges, they have produced a very short honey crop.

The bee industry shows prosperity and many beekeepers are driving new automobiles, while others have invested in auto trucks to be used in their work.

Corona, Calif. * * * L. L. Andrews.

In Iowa.—The beekeepers of Iowa have just closed the best annual meeting that the State Association has ever held. From the beginning of the first session there was not a dull moment. Two days and one evening were replete with addresses by some of the most competent experts in bee work and honey production. So intent on hearing every word and absorbing every thought was the audience, that even the pandemonium caused by the shrieking of sirens and whistles, and other noises, made when it was announced that the Germans had signed the Allies' armistice terms, did not influence the auditors to do anything more than shut out the uproar by closing the windows.

The Iowa Beekeepers' Association is now

one of the largest and best, having more than 500 members. Every Iowa beekeeper that is not a member is making a big mistake by not identifying himself with this best and most powerful agency to help him. Annual dues are 50 cents. The following officers have been elected for the coming year: Dr. A. F. Bonney of Buck Grove, president; Hamlin B. Miller of Marshalltown, vice president; Prof. F. Eric Millen of Ames, secretary-treasurer; E. G. Brown of Sargents Bluffs, F. E. Stacey of Iowa Falls, and L. W. Elmore of Fairfield, for board of directors.

Say, you county associations, subscribe for two or three sets of the bee journals and have a circulating library and see how it will help you thru many bee problems. No danger of any beekeeper becoming too old to learn. Look how young Dr. C. C. Miller is. He reads all of them, and then some. Keep your brains crowded with knowledge constantly creeping in, and there will be no danger of their rattling loose. Ask for the government reports. They are free to everybody interested enough to ask the Department for them.

Section honey is selling in Iowa as high as fifty cents per section. Oh, you fifteen-cents-a-section-two-for-a-quarter honey-producer. Did you help it, or are you still in blissful ignorance of the fact? Come out of it.

Marshalltown, Ia. Hamlin B. Miller.

* * *

In Minnesota.—The Farmers' and Home-Makers' Short Course will be held at the University Farm from Dec. 30 to Jan. 4 inclusive. Minnesota beekeepers should plan to attend the lectures and demonstrations that will be given in the beekeepers' section. A very interesting program has been planned, and it has been so arranged that those who are also interested in the poultry industry will be able to attend all the lectures on both subjects. This annual short course has been very helpful to many. The writer has in mind one who has between 60 and 70 colonies of bees and who has been successful from the beginning, because at the very first she attended the lectures given at the short course, which made it possible for her to avoid the mistakes so often made by the average beginner. This is one instance out of several that could be mentioned. Even if you have already made good progress in beekeeping, by attending this course you will find new inspiration and enthusiasm thru the exchange of plans and ideas. Prof. Francis Jager, chief of the Division of Bee Culture, is expected to be here and have charge of the course. He is now on his way home from the Balkans where he has been several months in charge of a Red Cross Agricultural unit in Serbia. At the beekeepers' conference, which will be held on Friday afternoon of the week, Frank S. Pool, sugar rep-



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representative of the Federal Food Administration for Minnesota, will speak on "Sugar for the Spring Feeding of Bees." The topic assigned to Dr. E. F. Phillips, "Beekeepers' Outlook and Duty for 1919," is of special interest. H. L. McMurry, special field agent, will speak on "Recent Investigations in Wintering Bees."

Bees are now in winter quarters or ought to be. Most of the bees in this State will be wintered in cellars. These cellars are of all kinds and descriptions. This makes it very hard to lay down hard and fast rules for cellar wintering. Watch the temperature and humidity. The temperature should not be allowed to go below 42, and even this may cause the bees to be uneasy and roar if the cellar is too damp. If necessary have a stove in the cellar which is connected with a chimney so that a fire can be started when the temperature goes too low.

Extracted honey is retailing in Minneapolis stores at \$3.50 per 10-pound pails and comb honey at 38 to 40 cents per box. Abundant fall rains give promise of a good stand of white clover for the coming season.

Minneapolis, Minn. Chas. D. Blaker.

* * *

In Michigan.—Applications for sugar still continue to arrive in considerable numbers. Many report that colonies that seemed to have had enough honey to last till spring, when examined in September, now do not have more than enough to last until Christmas. Many such colonies can be profitably wintered in the cellar where they can be fed with more certainty and convenience than when outdoors. Every possible colony should be nursed thru until spring, for bees will be scarce again as the losses of last winter have not been made up yet.

During a series of meetings held last winter the writer was surprised at the number of beekeepers who said that they kept the snow shoveled away from the fronts of the hives, because they were afraid that the bees would smother. This year, let us pile the snow around the colonies as much as possible and see if there is not a decided difference in favor of the snow packing, which nature furnishes in such abundance in some parts of our State. If the bees are not packed yet, do the packing with the very least disturbance of the colony; handle them so that the bees do not know that anything is being done. Bees that are to be wintered without protection should be protected from the winds with shocks of fodder or by some other means that will break the force of the wind and help to hold the snow.

Because of the epidemic of influenza, it was necessary to postpone the meeting of the Michigan Beekeepers' Association until January 21-23. This action was taken because of the advice of the Board of Health

and because it was feared that the attendance would be cut down very greatly on account of the epidemic. The programs will not be mailed until about the first of January, as the additional time given will permit some desirable changes in the program.

Each of the county associations should arrange for a winter meeting sometime between now and the middle of February. The State association decided to ask the Legislature for an additional appropriation for the inspection work and is expecting the support of the county associations in this matter. In order to assist in this, each organization should hold a meeting and decide on a plan for securing the active support of the legislators from the various counties. Mr. Ewell, the Extension Agent in Beekeeping, is very anxious to attend as many of these meetings as possible. Counties which are not organized, but in which live beekeepers who are interested in having an organization, should write to the State Inspector of Apiaries, East Lansing, and some arrangements will be made for visiting the county and assisting in the work.

East Lansing, Mich.

B. F. Kindig.

* * *

In Ontario.—In November Gleanings, mention was made of the of the cool September weather which hindered, to a very great extent, the extracting of the buckwheat honey. Judging by letters received from different States as well as at other places here in Canada, a similar condition prevailed with many other beekeepers. In my case, I managed to get the honey extracted—that is, the most of it, for warm the honey as much as I liked, quite a lot of it was left in the combs. At the home yard, the honey was carried into the extracting-house one day late in the season, and, altho the day was quite warm, yet the honey could not be extracted, as the very cool night preceding had chilled it too much. Owing to lack of room this honey was left in the extracting-house for over a week before being hauled to the kitchen where we had arrangements made for heating the room thoroly. Imagine my surprise to find that during the week that the honey had been stored in the unheated building, large quantities had granulated in the combs, many sealed combs being almost solid. All was uncapped but many combs are full of this granulated honey—in the lot of combs handled about 3,000 pounds were extracted and I suppose at least 500 pounds are still in combs. These combs full of honey present quite a problem as to their disposal, but the worst feature, as I see it, is the possibility of honey just like this granulating in the brood-nests later on during cold weather and causing heavy losses of bees. Last fall I saved out many combs of honey for fall feeding, and after I was thru winter preparation quite a lot were still left on hand. Al-



FROM NORTH, EAST, WEST AND SOUTH



tho they were off the hives for some weeks, yet when I warmed them up the honey extracted all right with no signs of granulation present. Why the difference I cannot understand; but I feel sure it does not augur well for the bees that have large quantities of this same honey for winter stores, as many of our colonies have this fall, the buckwheat flow having been good. This leads me to remark again that while honey for winter stores is often all right here in our cold climate, unfortunately **too often** it is not all right, and for our wintering conditions unquestionably the safest of all winter food for the cold months is syrup made from granulated sugar. A certain editor some time ago stated that the writer of these notes had expressed contrary opinions to the foregoing at some unstated time; but, needless to say, there is some mistake and some one else must have been in mind. Since keeping bees I have always made the emphatic claim and proved it by experience—much of it costly experience—that sugar syrup was far more dependable one year with another, than taking chances with honey stored in August and September.

As to sugar, of course the obtaining of this necessary product was quite a problem this fall. I found it difficult to get much granulated, and, acting on the advice of some good beekeepers whom I consulted, I fed a large quantity of raw sugar, known as Jamaica Crystals, at the north yards where I had no buckwheat, and brood-nests were light this fall. While it is now too late to make any effort to make things different provided I have made a big mistake, yet I would be glad to hear from others who may have tried this sugar in former years. Some of it has been sent out to various beekeepers by the Provincial apiarist by way of experimenting, so, no doubt, next spring we will know more about how it turns out. If it does not prove a good winter food, undoubtedly I will be hit hard, as my son and I have 200 colonies in our best clover location, practically depending on this sugar for winter stores. This particular lot of sugar fed to these bees was a very fine sample as compared with much other raw sugar that came under my notice, the crystals being quite light in color and well defined.

"When to put bees in the cellar," as the caption goes in November Gleanings, interests me for the first time in my beekeeping experience. Why? Simply because this fall for the first time my son and I have quite a large apiary to be wintered inside. To complicate the problem these bees are over 70 miles away from our home, and when I bid them good-bye in October after seeing that all were good and heavy for winter, it was with the expectation that I would not see them again till next spring, assuming, of course, that I live till then. The friend who lives on the farm where the

bees are, has placed the bees in the cellar for a number of years, and, naturally, I assume that he can do the job as well or better than I can. Then, again, it would cost me as much to go to the place as would pay him well for his work and at the same time allow him to hire a man to help him; and last, **but not least**, "yours truly" will be saved a lot of back-breaking work. As we get older we find it easier to shift off some of the heavy work on others when convenient to do so, and when such an arrangement can be made that is mutually agreeable to all concerned, needless to say, when I happen to be one of the parties getting out of work—I am **always agreeable**. As to "when" to put them in the cellar, of course, that is the question that is bothering me, but I think it best to hold off till near the end of November anyway, all depending upon what the weather is like in the meantime.

Markham, Ont.

J. L. Byer.

In Texas.—The matter of good queens in every hive is receiving more attention in Texas today than it ever has before. However, there are yet far too many beekeepers who do not study this matter. There are some who are saying now that every colony should be requeened every year. This, it would seem to me, is rather too broad a statement. Each colony should be carefully studied as an individual, and then in its relation to the whole and to the average. For years live-stock men have urged individual tests on cows, and poultry men have sought individual tests on hens, to show that some are not paying for their keep. Queens produced side by side from the same parent stock will not develop the same abilities in adult life. Many can not conceive that individuality in such exists just as in cows or hens. One of the most successful beekeepers in this State knows at the end of the year what every queen has done. If she has not come up to the standard he has set, she is replaced by another. In the same way, a good queen is left with a colony as long as she comes up to the standard, be that two or three years. This same beekeeper is gradually raising the standard for his queens, farther above the average each year toward the best queen. The outcome of this careful study and painstaking labor is wonderfully shown in the results obtained. Why can not others do as well? The answer lies with them.

Reports continue to arrive telling of improved conditions over much of the important beekeeping territory. In south Texas bees went into the winter in better shape than for five years past. Every colony was well stocked with young bees, and ample stores were in the hive. In several localities a good surplus was harvested during the



FROM NORTH, EAST, WEST AND SOUTH



fall flow, after two seasons of almost total failure. In southwest Texas conditions have improved greatly in practically every locality. In only one locality did the bees go into winter with short stores. In west Texas the fall rains revived the native vegetation to such an extent that most bees gathered ample stores. In north Texas the fall flow from cotton was the best for years. In one locality an extra extracting was possible from cotton flow. Generally speaking, the fall weather did much to revive the beekeeping industry, which certainly did suffer during the two past years. The indications now seem to point to conditions assuming normal.

The Extension Service of the A. & M. College thru its specialist in apiculture, H. B. Parks, is carrying on a very extensive campaign in east Texas. The results of this work, which is hardly more than under headway, are very pleasing. In practically every county Mr. Parks has found much unorganized interest in beekeeping. Naturally, the methods are not always modern, but a desire to adopt proper methods has been found in every instance. Several counties are being organized by Mr. Parks, with an idea to remove all box hives and prepare the way for inspection service with its quarantine regulations. Bee clubs among the boys have been organized in two counties, and it is expected to meet the increased demand for this work.

The Texas Apiary Inspection Service now has two former inspectors in the service. M. C. Stearns of McCollough County is now in the army, and H. A. Jones of Live Oak County is now in training camp.

Honey adulteration was the subject of a recent editorial. That subject is certainly very seldom heard among the beekeepers of this State. Among commercial beekeepers there is never a thought of adulterating honey. There has been too much effort to get the universal use of honey, for them to attempt to put other than the best of pure honey on market. F. B. Paddock.

College Station, Tex.

* * *

In Florida.—There is very little news of interest from Florida beekeepers this month. A fair crop of fall honey has been gathered and some is being shipped. Many of the large producers are holding their crops—not for higher prices but for increase and to care for the needs of the bees in case a freeze should cut off the orange bloom next spring. Pennyroyal is already in bloom in south Florida, but all reports agree that it does not yield much nectar until after Christmas. In this part of Florida we have some pennyroyal, but it appears to be a different variety, being found only around the scrubs; whereas in

the southern part of the State it is a “flat-woods” growth. Here the bloom does not open until the middle of January.

At this time it seems appropriate to warn the Northern beekeepers against selling their bees and coming to Florida with the idea that they can start apiaries and make big crops of honey with little effort. The local newspapers have from time to time given remarkable accounts of the profits made by beekeepers in Florida, but upon investigation it will be found that the writers are quite incompetent to give any information that is of value or in any way representative of conditions in commercial beekeeping. One article, given prominence in a local paper, stated that \$30 could be made from a hive of bees, with no expense and practically no attention, and the impression was given that beekeeping was a get-rich-quick business. Upon inquiry we find that this writer owns just one colony, and he is situated on a location which could not possibly support more than 25 colonies in a good season. An isolated colony almost always produces more than the average of a big yard, just as there are always odd colonies that produce much more than others in the same yard. My record shows that my best colony has given me 362 lbs. this year, but to state that that amount can be expected from every hive would be nonsense. It must be remembered that this has been an exceptionally good year for honey in Florida, and we have made more than in the last four years put together. Last year there was practically no honey produced in this part of Florida, and the loss of bees by starvation was heavy. Beemen intending to locate in this State should investigate thoroly, and even then it will be difficult to find a good location unless previous experience has taught the recognition of our honey flora. After this year's bountiful harvest, difficulty will be found in buying bees, for no one is willing to sell and all are making preparations to increase the size of their apiaries and occupy all favorable locations. New beginners there are by the hundreds, and, should next year prove as successful as this year, bees will be as plentiful as mosquitoes. The chances are even that next year may give us a crop failure, and in that case most of the beginners will drop out or be bought out by those already well established.

It is to be hoped that all beemen have read the editorials in the August and October Gleanings on packing honey. There have been such heavy losses in transportation from Florida that the Food Administration has thought it necessary to issue a bulletin on the subject, which will be forwarded to all interested. At this time of writing, Nov. 3, this bulletin is not completed, but it will be issued in about 10 days.

Apopka, Fla.

Harry Hewitt.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Bees Can Delay Hatching.

proved. In my nursery hive I have placed a comb of eggs, freshly laid, and these have not hatched in a week or 10 days, or at all, until I have given each cell a small supply of royal jelly thinned with new honey; they then hatched, and, when given to the bees, were fed and capped over as usual. The temperature of this hive is 95 degrees, and I have placed in it an artificial queen-cell containing a day-old grub, fed it with royal jelly, transferred it to an old used queen-cell, and, in due time, a perfect queen has emerged, altho not sealed up.

I raised a frame of queen-cells this summer on the Doolittle system. A rather unusual thing about them, apart from their fine size, is that they were started and finished in one super, above a laying queen, and every one was accepted, which is rather

That bees can delay the hatching of eggs, I believe may be easily

uncommon. They were from a queen which I got last summer. She was 34 days in the mails, and yet she and the workers arrived brisk and lively, none dead, and not half their candy consumed, which speaks well for their stamina and the way they were packed.

We are quite unable to keep black bees here, owing to 'Isle of Wight' disease, as they go under without a struggle; whilst the Italians, even if they contract it, will throw it off with help from the owner.

Sheffield, England.

G. Barratt.

Can Bees Hear— Who Knows?

As long ago as in 1876, there were several articles in the American Bee Journal in regard to the above, and if I am correct the matter has more or less been discussed thru our own journal in years past. The article mentioned was from J. D. Kruschke, now of Berkeley, Cal. He



The exhibit that took first prize at the Southern California District Fair, held at Riverside, Calif., Oct. 8 to 12. The picture tells how handsome and complete this exhibit was, but does not show the information concerning beekeeping and honey that was given out by expert beekeepers constantly in attendance at the exhibit. Beekeepers in other parts of the country might well follow the example of the Riverside County Beekeeping Club in popularizing honey. There is no better advertising of honey than such an exhibition as this.

HEADS OF GRAIN FROM DIFFERENT FIELDS

just writes an interesting letter in regard to it, but it is too long for publication. He thinks some genius of the present day ought to be able to make an instrument that would produce the proper sound to call a swarm of bees from running away. I suppose our readers are well aware, at least the older ones, that in days gone by we used to have a turkey call that would call wild turkeys from quite a distance away, and birds and animals of different kinds have been called by expert woodsmen by imitating the peculiar noises they make. Can any one give us information in regard to this interesting matter?

A. I. Root.

Medina, O.

Uses Water in Cleaning Frames.

I want to tell you how I manage to get my extracting frames cleaned as fast as I extract them. I put them back onto the hives, but before doing so I saturate the comb well with water. Sometimes some of the cells are half filled with water. At this time of the year bees are gathering lots of water and this puts it right into the hive just when they want it and saves them taking in just so much water. If you put the frames back onto the hives at night, the next day you will find your combs all cleaned, and the honey that was sticking to the combs nicely stored in the bottom of the cells.

Wm. Craig.

Aitkin, Minn.

Is Not Troubled by Drifting.

I read much about bees drifting when packed in multiple winter cases. For the past two years I have been packing some bees in two-colony cases, and have not experienced any trouble from drifting. But I have always fastened a six-inch board vertically in the middle of the front of the winter case between the two entrances. As bees seem to invariably know right from left, this plan, I believe, prevents drifting. This season I have taken a further precaution and have painted the one side of the front a different color from the rest of the case.

R. D. Hiatt,

Deputy State Inspector.

Columbus, O.

Simple Wax-Rendering Outfit.

As many small beekeepers have more or less old combs and cappings to render occasionally but not sufficient to warrant purchasing a wax press and other accessories, I would like to suggest a very efficient and cheap way of doing this work. The only utensils necessary are a pail or wash-boiler, a dipper, and a butter-tub, having a hole bored in it near the bottom, with a plug, or,

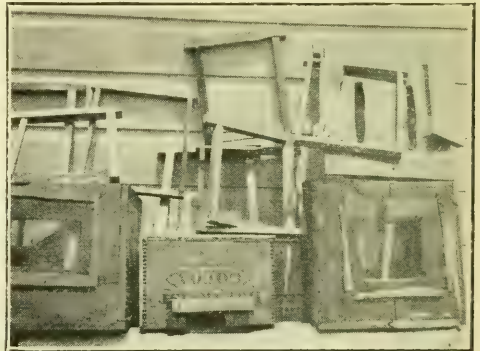
better, a faucet to draw off the excess water. Tie the combs in a bag and put in the boiler with plenty of water to boil. Have a dasher such as is used in the old-fashioned stone churn, and when the water boils keep pressing on the bag of combs, squeezing out the water and melted wax. When the wax accumulates at the top dip it into the tub. By drawing off the excess water from the tub and returning it to the boiler, little heat is lost; and by continuing the pressing on the bag of combs and skimming the wax off the top, in a surprisingly short time there will be little wax left to come to the top. As thoro a job may be done in this way as with a press, and, if the tub is well covered when finished and left in a warm room to cool, a nice cake of yellow wax will result.

Rochester, N. Y.

A. G. Dye.

Keeping Bees and Bee Keeping —

Below are two pictures —one shows the three box-hive homes of some bees, and the other shows the modern movable-frame homes of the same bees. The



Equipment of a man who "kept bees."



Equipment of men who are beekeepers.

three box hives were bought by us from a first-class mechanic. Take a look at those frames! Wasn't that a fine job for a me-

HEADS OF GRAIN FROM DIFFERENT FIELDS

chanic! He told us that he took from them last year three "hives" (as he called them), and got 17 lbs. of honey. We bought those three boxes of bees June 8, and transferred them into three modern hives having drawn combs and gave each one of them a queen of the best Italian stock. From June 8 to Sept. 18 of this year they made us 114 lbs. of extracted honey per colony, which sold at 23 cents a pound, making an average income per colony of \$24.15. That is the difference between keeping bees and beekeeping.

C. Klabuhn & Sons.

Conneaut, O.

How Stingless Bees Perform.

As a source of possible interest I have purchased four colonies of stingless bees. The natives find these wild bees in hollow trees, from which they cut about one yard of limb or tree body, leaving the entrance in the center. Both ends are then covered with mud and the small log hung in the shade. After purchasing, I transferred to ten-frame hives, and during the process discovered that in each colony the combs were all in a horizontal position, five or six on top of each other, being supported by little wax pillars and

having a $\frac{3}{4}$ -inch space between the combs. There were no empty cells, but all of the eggs and larvæ were sealed in the cells, the eggs being laid in pollen and sealed immediately. The queen is larger than an Italian, but has very small wings and can not fly. These bees are good workers. All in between the frames of the hives that I gave them they built quantities of cups about 1 inch in diameter and $1\frac{1}{4}$ inches in height, and filled these with honey.

Enrique Bahr.

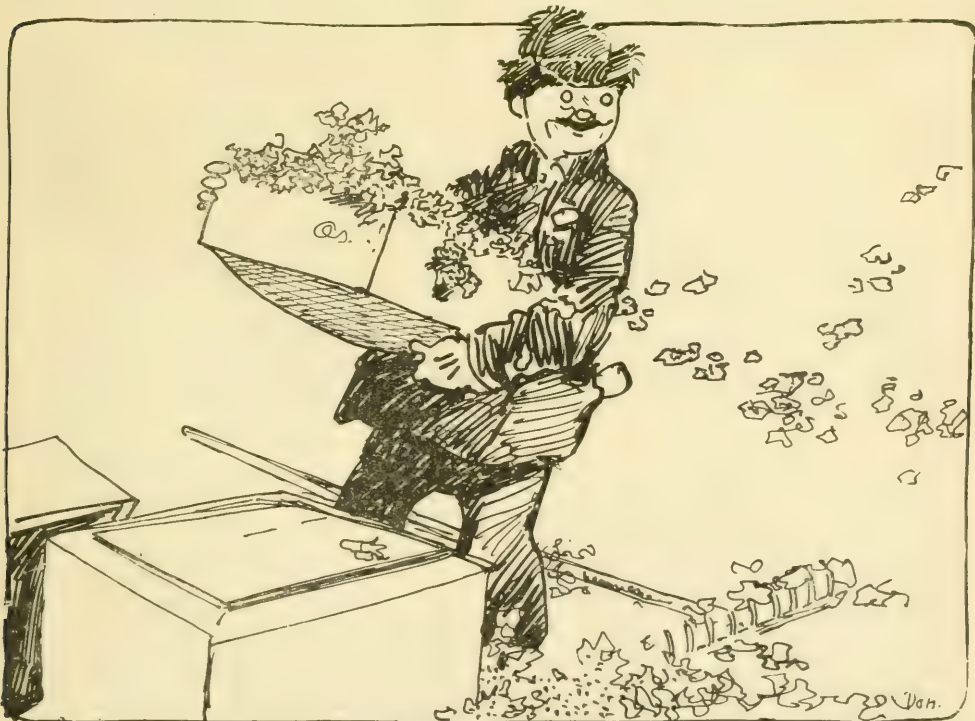
San Pedro, Honduras.

Can Anybody Answer This?

Has any one invented a dependable contrivance for watering bees on the desert? Here in the West there are many fine locations for apiaries, so far as pasturage is concerned, but no dependable water supply. Some sort of metal tank holding three or four barrels of water with a safe and sure device for permitting a small quantity to escape at a time would fill the bill and permit an extension of out-apiaries to many waterless localities. Has any one hit on a device?

W. E. Woodruff.

Cottonwood, Ariz.



THE BACKLOT BUZZER.

Benny Sourweed, who quit chickens for bees, says he'll never go back to poultry. Benny says with the price of honey this fall, he can do all the cacklin' and crowin' himself.

"ADVANCES of Large Hives," by C. P. Dadant, in November "American Bee Journal," is an article of much interest. It is there stated that Charles Dadant began supporting the large hives in 1868 when he found a box-hive beekeeper who had a colony he had kept for more than 30 years. The colony was remarkably large and the hive had a capacity of about two bushels. In studying the matter, Charles Dadant learned that there had already been three advocates of the large hive, Debeauvoys, Langstroth, and Quinby. He found this striking statement by Langstroth: "A good swarm of bees put, in a good season, into a diminutive hive, may be compared to a powerful team of horses harnessed to a baby-wagon, or a noble fall of water wasted in turning a petty water-wheel." Soon coming to see that the prolificness of the queen should determine the hive size, Charles Dadant began experimenting on the necessary capacity of a suitable brood-chamber. These experiments he also reinforced by calculations. Finding that a good queen could lay an average of 3,500 eggs daily in the active season, and considering that a good hive should accommodate the breeding of a good queen for 21 days at least, he estimated that 75,500 cells would be needed for brood in the breeding season. Also 20 per cent of the breeding room would be needed for stores of honey and pollen, thus making requisite 90,000 cells. For several years following 1815, there was much discussion concerning large hives, and in about 1900 the A. I. Root Co. put out the ten-frame Jumbo hive, the frames being the same length as the Langstroth and the same depth as the Quinby, and having a capacity of over 95,000 worker-cells. This in our country was called the "Jumbo" hive and in Europe the "Dadant-Root" hive. To the above review we are pleased to add that considerable credit is certainly due the Dadants for so long holding before the public the value of large hives.

* * *

INTENSIVE BEEKEEPING.

"Trial of an Intensive System of Beekeeping," by F. W. L. Sladen, C. E. F., Ottawa, appears in the Canadian Horticulturist and Beekeeper for October. This last season he tried the plan of dividing his ten-frame brood-chambers into two parts, each containing five combs. He did this by means of a thin frame covered on both sides with wire cloth, giving a queen-cell to each part. A portico fixed to the front of the hive provided the two sides with separate entrances nine inches apart. He continues as follows:

Two weak colonies in a ten-frame hive separated by the wire-cloth division were wintered in the

THE BEST FROM OTHERS

Iona Fowls

cellar in 1917-'18. They were found to cover $2\frac{1}{2}$ and .3 combs respectively on April 25. The last week in May, about the middle of the honey flow from dandelion, the stronger one was transferred to a separate hive.

Both colonies built up strong in time for the clover flow which commenced on June 25. The weaker one was fed a pound of thin syrup a day during the honey dearth that followed the dandelion flow. This colony, treated as explained below, gave 220 pounds of honey and an increase of one colony. The other colony was not fed at this time, and gave 260 pounds of honey with no increase. The total yield of the double colony was, therefore, 480 pounds. The first colony was helped by the feeding; the second by the fact that they were hybrids. The average yield of the other colonies in the apiary was 176 pounds.

This system supplies a method of increasing bees without sacrificing the honey crop, each colony becoming two. Where no increase is desired, one of these colonies may be placed over the other at the beginning of the honey flow. A larger crop will result. It also provides a surplus of young fertile queens without the trouble of forming nuclei, and, if desired, without even raising the queens artificially, because excellent queens may be raised from two-day-old larvæ that may be found in swarm-cells at the time the queen is caged. Indeed, it has been found advantageous to delay treating a colony until its preparations for swarming have advanced to about this stage, ascertained by weekly examinations.

In the same article he tells of making spring increase in the following manner:

A strong colony covering six combs on April 25 was removed to a new stand on May 20 and a purchased fertile queen introduced to the bees that returned to a new hive placed on the old stand in which one of the combs of brood with the adhering bees had been put. The result was 356 pounds of surplus honey and an increase of two colonies, including the division made.

This plan of increase has been also reported by others, the last being Ira D. Bartlett, who lately made us a visit at Medina. He has used this method for fall increase, but inserted no brood in the hive, and considered it quite unnecessary. The colonies built up well; but peculiar conditions in his locality caused him finally to discard the plan. On cold days great numbers of the bees, young as well as old, fly from their hives never to return. One fall in three days he thus lost almost one-half of his bees. He believes, however, that in many localities this plan, even in the fall, would be quite successful.

* * *

APIARY BOUNDARIES IN NEW ZEALAND.

Trouble has arisen in New Zealand concerning the question of apiary boundaries, 700 colonies having been recently located in the Thames and Te Aroha districts in different spots, some within half a mile of other apiaries. The editor of the New Zealand Beekeepers' Journal, October, while he deplores this condition, feels it is useless to ask for legislation on the subject. He claims

that such cases are rare, and but few people are affected. He also says that beekeepers would have difficulty in defining the limits of their bee pasturage. Charles F. Horn, in a letter to the editor, rightly insists that such encroachment can and should be stopped. He speaks of the moral injustice and economic waste of labor and capital, and argues that the difficulty of tackling the matter is no greater than that of miners' rights, which has already been settled by law.

* * *

SHORTAGE OF BEES AND HONEY IN EUROPE.

The demand for bees and honey in many parts of the European continent is now tremendous. This, according to the American Bee Journal for October, has resulted in such high prices (44¼ cents in 100-pound lots, and in some cases as high as 61 cents in retail packages) that the vice-president of the Grocers' Syndicate of France has asked the state to fix the price on honey, and has urged the grocers to boycott the beekeepers. The beekeepers are protesting against this, asserting a shortage of sugar and of bees and beekeepers is the cause of the high prices. Compared with 1914, no more than 40 per cent of the colonies of France are now in existence; and since it is impossible to obtain sugar for feeding, there would be a still greater loss the coming winter, probably cutting the 40 per cent down to 25. It has been estimated that in Brittany alone there will be tens of thousands destroyed during October and November.

* * *

IS THERE LESS DANGER OF STARVING IN LARGE HIVES?

The following question and answer appear in the American Bee Journal for November:

Question.—"Is a ten-frame hive better than an eight-frame hive? If so, why?"

Answer.—"The large hive is generally preferred, one important reason being that there is less danger of bees starving in winter."

Dr. Miller is so invariably right that it takes a good deal of courage to question any of his statements. However, altho we prefer the ten-frame hive and could name several good reasons for this preference, wintering would not be among them. We believe there is not only more danger of the colony on ten frames starving, but also more danger of their freezing. During very cold winters we have known medium colonies on ten frames to starve with plenty of stores at the sides of the hive, the bees having evidently been too cold to reach the honey. Had the hive space been smaller it would have been much easier to keep up the temperature, and less stores would have been needed. In the case of the eight-frame hive, or the ten-frame contracted to eight-frame, the colony may be left with the necessary clustering-space, and still have 35 or more pounds of honey. Good colonies, if suitably packed, will winter on even seven frames, which we have repeatedly proved with hundreds of colonies.

THE TWO PERILS, DYSENTERY AND THE WEATHER.

Under the head of "Two Perils, Dysentery and the Weather," in October British Bee Journal we find there discussed the interdependence of disease and weather. It is pointed out that, tho recoveries from disease have been attributed to various chemicals, the weather probably has had a large part in such cures. When colonies are subjected to cold damp weather, their vitality is so impaired that they are quite liable to infection. The statement is also made that, even in the absence of infection, cold and dampness have killed many colonies supposed to have been suffering from the Isle of Wight disease. The writer believes that the four factors—cold, wet, starvation, and malnutrition—which predispose to infection in the case of human diseases, may also be equally potent causes of bee diseases.

* * *

DO SWARMS RECOGNIZE THEIR OWN BROOD?

In speaking of preventing new swarms from absconding, the editor of Western Honey Bee of September, 1918, says, "In putting in a frame of brood you must either take it from another colony, which weakens that colony just that much, or else from the old hive, and I am inclined to think that the recognition of their own brood by the newly-hived swarm tends to make them dissatisfied, especially when hived on the old stand."

(Does anyone know that bees recognize their own brood from that of any other hive?)

* * *

DOES GASOLINE KILL FOUL BROOD GERMS?

In reply to the question, "Is it true that gasoline will kill foul-brood germs?" The Western Honeybee, September, in an editorial, replies: "Certainly. Years of experience have proved that gasoline is one of the best disinfectants."

We know of no scientific authority that would recommend gasoline alone. Yet, if a match were touched to it, it would probably be effective. Any one who has disinfected hives by painting with gasoline, and has had no recurrence of the disease, would doubtless have had the same results had he painted the hives with water.

* * *

C. W. Aeppler, November American Bee Journal, states that the number of colonies in Switzerland during the last 17 years has diminished by 16 per cent, and the number of beekeepers by 30 per cent. In speaking of the Swiss government fixing the price of honey to the consumer, he says it is probably the first time in history that any government has done this. The price is now fixed at the rate of 64 cents a pound.

* * *

"The British Board of Agriculture and Fisheries has appointed a committee to study the life habits of the honeybee with the object of improving the conditions under which beekeeping is carried on in England

and Wales, and to investigate the epidemic diseases of the bee, more especially the disease or group of diseases which pass under the name of "Isle of Wight."—*American Bee Journal*, October, 1918.

* * *

E. G. LeStourgeon, October Beekeepers' Item, believes that if the Texas beekeepers would winter in one story with a good wind-break, contracted entrance, hives facing south or southeast, and earth piled about the hive to prevent winds from circulating under them, the 24 per cent loss of last winter would be greatly reduced, and the bees would use 30 per cent less stores than last winter.

* * *

Joseph C. Scott, *American Bee Journal* for November, tells of losing brood in the South from some unknown cause. At first the unsealed larvæ turned purplish. It then died, turned white, and, if not removed, became black and had somewhat the appearance of foul brood. He believes this was caused by the juice of fermenting, rotting fruit.

* * *

Texas has a foul-brood law that requires an inspection certificate to accompany all shipments of honey and apiarian products. Since combs from box hives can not be inspected, this law, if enforced, will soon eliminate the box hive from the State, according to E. G. LeStourgeon, in the Beekeepers' Item for October.

* * *

In the October Canadian Horticulturist and Beekeeper is the following:

"Do not put weak colonies away for the winter. They consume more stores, so valuable now, than strong ones, and even then are more likely to die."

This is a little misleading. It would be nearer correct to say that these weak colonies consume more stores **in comparison to their size** than strong colonies.

* * *

Under the subject of transferring, September Western Honeybee suggests that, if possible, the side of the old box should be removed so as to get at the sides, not the ends, of the combs. This is a good point usually overlooked in discussions on transferring.

* * *

Morley Pettit, in the October Canadian Horticulturist and Beekeeper, estimates that Ontario alone produces annually 10,000 tons of honey. He further states that, aside from Quebec, the other provinces have their honey resources practically untouched.

* * *

The editor in the October New Zealand Beekeepers' Journal says it has been estimated that in a good year a colony consumes from 200 to 600 pounds of honey, and he believes that an average amount might be conservatively placed at 400 pounds.

* * *

It is in The Domestic Beekeeper for November that we learn that unless the edi-

tor's colonies in government four-colony winter cases, winter in better condition than they have for the last four winters, all such cases in his yards will be discarded in favor of tarred paper cases. Altho we have heard excellent reports from many, we too feel that the quadruple case has been somewhat disappointing.

* * *

Arthur C. Miller, in November American Bee Journal, says in his opinion the current belief that queens raised under the swarming impulse transmit the swarming tendency to their progeny, is quite erroneous. He considers such queens among the best and says after using thousands of "swarming cells" he has never yet been able to detect any sign of inheritance of the swarming impulse. In fact, while using such cells he has, during late years, reduced swarming to less than two per cent of his colonies.

* * *

Even in as warm a State as Texas we find an advocate of the small entrance. Frank Talbot, in the Beekeepers' Item for October, recommends an opening $\frac{3}{8}$ by 4 inches. In this same connection we call attention to the fact that Colon P. Campbell (President Michigan Beekeepers' Association) in November Domestic Beekeeper contracts the entrances only $\frac{3}{8}$ of an inch by the full width of the hive.

* * *

C. S. Enab, in the October Beekeepers' Item, reports that the Western Honey Producers of Sioux City, Iowa, have been eliminating the box hive from their locality, in some cases by persuasion or buying, and in others by running such apiaries on shares.

* * *

In the September Western Honey Bee the editor says he uses two drawn combs instead of brood to hold new swarms, for in case young brood is used and the colony is dissatisfied, the bees build queen-cells and soon leave.

* * *

E. G. Ward, in the August New Zealand Beekeepers' Journal, states that, on opening a hive, he rarely smokes the bees at the entrance, as he considers it does more harm than good.

* * *

"Any colony that goes into the winter with a first-class queen will come thru in much the best condition."—Prof. F. B. Pad-dock in Beekeepers' Item, October.

* * *

Under the heading, "Let Us Be Honest," British Bee Journal, is the statement that the "reputed pound" or 14-ounce bottles should be eliminated.

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A temporary wind-break of surplus supers placed in pairs of piles is being tried out by Louis H. Scholl, as stated in the Beekeepers' Item for October.

THE annual meeting of the Minnesota Beekeepers' Association will be held in the Club Room of the West Hotel at Minneapolis, Dec. 4 and 5. A very excellent program has been prepared. Among the features of this program are: A preliminary report on Michigan bee-culture survey, giving distribution of bees and beekeepers in Minnesota, by L. V. France; discussion of queens purchased for members of the Minnesota Beekeepers' Association thru the Association; discussion of wintering problems and insulation, occupying the afternoon of the first day's session; a discussion of vitamins by Profs. R. M. Washburn and R. A. Dutcher; the bee-disease situation in Minnesota by Chas. D. Blaker; bee culture at state fairs by B. F. Kindig and C. B. Stravs; the honey-manufacture question by C. P. Dadant; bee culture and the war, by Major Francis Jager. The program clearly indicates that Minnesota beekeepers are very much awake and quite up-to-date.

* * *

The 18th annual meeting of the Illinois State Beekeepers' Association will be held in the Sun Parlor of the Leland Hotel at Springfield on Dec. 17 and 18. Among the prominent beemen to be present will be Morley Pettit of Ontario; N. E. France of Platteville, Wis.; F. Eric Millen, State Apiarist of Iowa; Editor C. P. Dadant of the American Bee Journal. This Association now has 400 members. A program of the forthcoming annual meeting may be secured of Jas. A. Stone, Secretary, R. F. D. No. 2, Farmingdale, Ill.

* * *

From reports received from beekeepers and from bee-supply manufacturers thruout the country, there is every indication that there will be an unusual demand for bees, queens, and all kinds of beekeepers' supplies next year. The interest in beekeeping was never keener nor more general in this country than at the present time.

* * *

The New York State Beekeepers' meeting will be held on Dec. 3 and 4 at the Hotel Statler, Buffalo, N. Y. F. Greiner, Naples, N. Y., is secretary, of whom more details of the forthcoming meeting may be learned.

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The Eastern New York Beekeepers' Association will hold its annual meeting at the Court House in Albany, N. Y., on Tuesday, December 10. S. Davenport, Indian Fields, N. Y., is secretary.

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The Chicago-Northwestern Beekeepers' Association meeting, to have been held at the Great Northern Hotel, Chicago, on Dec. 10 and 11, has been postponed because of the influenza epidemic still prevailing.



Under date of Nov. 19, the Bureau of Markets, U. S. Dept. of Agriculture, says: "Imports of honey from Mexico and West Indies to be permitted at

least until Jan. 1 under licenses to be issued by the War Trade Board." Such imports have been prohibited for the last six months. A considerable amount of West Indian honey has already arrived in New York under permission of the new regulation. As soon as shipping space can be secured Europe will take every pound of West Indian honey obtainable.

* * *

As before intimated in these columns, Prof. Burton N. Gates of the Massachusetts Agricultural College at Amherst, Mass., has been appointed Professor of Beekeeping at the Ontario Agricultural College at Guelph, Ont. He is also made Provincial Apiarist for the Province of Ontario, and as a part of his duties will be secretary of the Ontario Beekeepers' Association. These duties began Sept. 1. Prof. Gates' official title in his work at the Massachusetts Agricultural College was that of "Collaborator, Apicultural Investigations, Associate Professor of Beekeeping, Massachusetts Agricultural College." In closing a post card sent out to the beekeepers of Massachusetts under date of Sept. 24, giving directions how to prepare for wintering bees, Prof. Gates said in closing: "During the past eight years the writer has enjoyed his work with and the continued co-operation of the beekeepers. In resigning the beekeeping work in Massachusetts, he wishes them the fullest success."

* * *

"A great deal of honey that has been shipped for export during the last three or four years has been bought by brokers who know nothing about honey. The sellers realized this, and no doubt saw how easy it would be to adulterate and not get caught. After the goods are on the steamer and they have secured their money from the bank, there is very little chance of getting into trouble. Hence certain Jewish firms have gone into this business of adulteration and selling at cut prices. They usually make up some sort of an excuse to explain the reason for the cut price, as in this case, needing the money for some other proposition. It will be necessary for some one to notify the authorities to be on the lookout for these fellows. Otherwise, all the good work that has been done in the past 25 years towards gaining the confidence of the consumers that extracted honey is pure, will all be wasted. We do not think that there is much of it being done, but it should be stopped before it goes too far."—Special report to Gleanings from New York Correspondent.

QUESTION.—
I have a quantity of last year's honey, some of it candied in the comb. Would it be safe to feed it to the bees for winter stores or would it be better to feed it, if at all, in the spring?

Pennsylvania.

Answer.—The combs of candied honey would not be suitable for winter stores. In order to get such honey out of the combs it would be necessary for the bees to use quite a good deal of water, and, of course, they are unable to obtain this during the winter months. It would, therefore, be better to wait until next spring. At that time remove the cappings, lay the combs flat in the bottom of some container, and pour water on them from a height; then place the combs, while wet, in the hive for the bees to clean out.

Questions.—(1) Is the following a good method of making comb foundation? Cut a piece of screen wire the size and shape wanted. Dip in melted wax. If so, is it not especially good for brood-frames? (2) What is the best way to unite two or three colonies in the fall? (3) How close is it advisable to set hives? (4) If one wishes to requeen, how would it do to kill the old queen and let the bees get another from worker brood in the hive?

Missouri.

Roscoe Mawson.

Answers.—(1) Using screen wire for the base of foundation would not be satisfactory, since the holes are four-sided instead of hexagonal. The bees would be apt to build the combs crisscross or any way they desired. (2) Two or three colonies may easily be united in the fall by doing the work along toward night and alternating the combs, giving the colonies or nuclei a good smoking at the same time. If the work is done in the daytime, about the best plan is to use the queen-excluder and one thickness of newspaper immediately above the brood-chamber and then set the queenless colony over this. In a few hours' time the bees will gnaw thru the paper, and the two colonies unite peaceably. (3) The hives may be placed within a few inches of each other; but there is more danger that the queens may be lost when they leave the hives to be mated, and there is also more or less drifting of bees from one hive to another. We think it is a better plan to put the hives five or six feet apart if one has sufficient room, and also to have them face alternately south and east. (4) One may requeen the way you suggest by killing the old queen and allowing the bees to raise another from the brood already in the hive; but except at the height of the honey flow one would be apt not to get as good a queen. More than this, there are certain times in the season when this would be a distinct disadvantage. For instance, immediately before the honey flow one would not wish to be without brood so long, as these bees are necessary in order that the colony may be built up in time for

GLEANED BY ASKING

Iona Fowls

the flow. Also in late summer or early fall it is a poor plan to kill the queen and leave the colony for some time queenless, for at that time of year is desirable that new bees be raised in order that the colonies may go into winter quarters in good condition.

Question.—Do late-reared queens always lay soon after becoming fertile? I had several queens this fall that looked like fertile ones, but they did not lay.

Michigan.

C. E. Halsted.

Answer.—Sometimes late-reared queens do not lay until the following spring. However, you would probably have been able to get these queens to lay in the fall, if you had fed them slowly for a time, for perhaps a week or so.

Question.—I have four colonies, each consisting of about 4 frames of bees. How would this plan of doubling up work? Remove the cover from the first hive, and place on top two queen-excluding boards; then next the second hive and its cover; then pack one foot of straw around and over the top of the whole business. With such a plan the bees would tolerate both queens, would they not? Would the usual entrance slide provide enough air, or would it be necessary to bore a hole in the upper hive?

Pennsylvania.

Ralph Gaston.

Answer.—To bore a hole in the upper hive would not be necessary, and would be apt to cause a draft. Since the nuclei are so small, we hardly think your plan a good one, for the heat from the lower hive would rise to the upper one, and the lower nucleus would have extremely hard work to keep warm enough. It would be better to have both nuclei in the lower hive separated by a thin wooden dummy or division-board. We have known such nuclei to be wintered successfully separated by a double screen division-board but have never tried this latter plan ourselves, and should fear it would be a much cooler arrangement. Ordinarily we would say the best thing to do with those two nuclei would be to unite them or else winter them in a good cellar; for, of course, small colonies can be wintered successfully in the cellar if the conditions are right.

Questions.—(1) I have five 10-frame hives that are very full of honey. If I pack bees so they will use only a small amount this winter, will there be enough brood-comb next spring for bees to raise plenty of brood? How can I remedy this? (2) How can I tell honeydew? If it is not desirable for winter stores, should it not be removed?

Ohio.

Charles Case.

Answers.—(1) The object of contracting the brood-chamber is simply to give smaller space to heat during the winter. Bees would, it is true, use more stores during the winter if they had a larger space to heat than if they had a small one; but we would hardly say that the contraction would result in the consumption of only a small amount of their usual stores. In the spring, as the

bees appear to be crowded so that the queen needs more room for laying, the combs that have been removed in the fall may then be replaced. (2) It is usually easy to tell honeydew from its rank flavor and also its cloudy appearance. It is not desirable for winter stores; and if there is any great quantity of it, it should be removed and better stores given. If there is only a small amount, it might be well to feed 10 pounds of good sugar syrup on top of this honeydew. If this is done the bees will probably not get down to the honeydew till next spring, when they will be able to have plenty of good flights, and the honeydew would do them no harm.

Question.—I should like to ask your opinion as to the location of my bees. I have them at the south end of a good honey-pasture which is good for about two miles north. Three miles south of here there is also good pasture. I was wondering if it would not pay me to move my bees half way between.

R. C. Carter.

Florida.

Answer.—Bees often go three or more miles for nectar; and yet from your description we believe it would not pay you to move between these two localities, for the bees certainly do better if the pasturage is very near than if it is at a distance. Why not divide your apiary and move part of it into each of these two pastures?

Question.—How is the State of Florida, and particularly the section 12 miles east of Tampa (high pine land), "Dixie estates," for an apiary and the raising of honey? Is the honey from citrus-fruit blossoms of good quality? Do the bees work all the year in that climate? I should also be glad of any other information you may care to give.

New York City.

A. Hutchinson.

Answer.—The region 12 miles east of Tampa is not particularly noted for the production of honey. You will get honey, however, from the citrus groves, and the honey is of the very finest quality. You will also secure some from gallberry and saw-palmetto. If the apiary in question is near some bay or inlet, you will be able to get some mangrove honey. We would advise apiaries not larger than 25 or 30 colonies to the yard, putting the yards four or five miles apart. Unless there are hard roads or bays or inlets in the vicinity, it would be difficult to move bees, as the sand is rather deep, making it hard for an automobile to traverse.

Question.—Please inform me whether the plan of winter protection in the Rockies as illustrated in the October Gleanings would be good to use in Pennsylvania.

J. R. Megargee.

Pennsylvania.

Answer.—The plan of wintering given by Wesley Foster could be practiced with profit in your State, if a space intervenes between the ground and the packing. If the packing reaches clear from the hive to the ground, it would absorb dampness and probably result in moldy combs. In Colorado the ground is very dry, so that no harm is done by placing the packing on the ground as Mr. Foster suggests.

Question.—Would it be safe to feed bees combs of honey that have been fumigated with bisulphide of carbon to kill moths, if such combs have been aired out several days after the carbon was used?

Nebraska.

C. W. Farington.

Answer.—This honey would not injure either bees or people.

Question.—An apiary of 75 colonies is located in the midst of a large fruit-tree section. How far from the apiary can the orchardist expect as complete pollination as he can within 80 rods of the apiary?

California.

A. B. Cook.

Answer.—This would vary in different seasons and different localities. In a climate where the spring is often so cold that the bees do not get a chance for flight except only a few days during fruit bloom, you can see that the conditions would be quite different from those in your own locality. Therefore, for a general answer, we would say that at a greater distance than 80 rods you could not expect as complete pollination as you could within that distance of the apiary, altho during very warm weather this would not hold. Here at Medina we have known of some fruit trees only a few rods apart. The one nearest the apiary would be completely pollinated so that the fruit was heavy on the tree, and great quantities of it had to be picked in order that the remaining fruit might mature, while only a short distance from this tree were others that were not pollinated nearly so well. We have had reports, also, of orchards in which the trees immediately surrounding the hives would hang full of fruit, while those around the edges would be in striking contrast.

Question.—Please let me know what per cent of queens introduced by the Miller smoke method are accepted. Do you practice this method now? If so, do you always find the old queen first?

Kentucky.

Claude W. Wilson.

Answer.—We can not tell what per cent of the queens introduced by the Miller smoke method are accepted, for it depends so much upon weather conditions and the honey flow. For best results the old queen should be killed before introducing the new one, altho many have reported introducing without removing the old one. In such a case you could not be certain that the new queen would be accepted. Probably the poorer of the two queens would be killed. We are not using this method in our apiaries at present, but are introducing with the Miller cages and also with the Thompson cage, which was described on page 463 of Gleanings for August. Sometimes when we are in a hurry we also introduce by simply running a virgin in at the entrance.

Question.—What is the noise one sometimes hears when going thru a colony of bees—the noise a deep bass note somewhat resembling the cooing of a pigeon. I have been told by a very prominent beekeeper that it is the signal for the destruction of the drones; but I have heard it at almost all times.

England.

G. Barratt.

Answer.—We do not know to what you refer unless it be to the quacking of the queens.

"ABOUT
At three
years ago

I sent for a sample package of the yellow and white sweet clover seed, and the first year of its maturity I gathered 18 pounds of seed. I seeded some alongside the garden and the creek and in the alfalfa field on a separate piece of ground, and I have 50 pounds of seed gathered this season. Our stock, horses, and cows eat it with delight, and my bees gathered lots of honey in spite of the drouth we had again this season, which lasted from the last day of March until Aug. 5."—Mrs. Margaret Green, Washington County, Ida.

"An old beekeeper tells me that I can feed my bees ground oats this winter as sugar can not be had, and I could not afford it anyway. How about the oats?"—Wiley W. Smith, Wythe County, Va.

"I should have requeened this fall but there was no use of buying new queens, for I couldn't find the old ones, as they are too black and too shy for me, and no one nearer than 40 miles that I know of that could find such black queens."—A. I. Marston, Ida County, Ia.

"Middle south Florida is one of the best honey fields in the State, both as for quality and quantity. I have 140 stands of bees; no disease; never feed; gather some honey every month; swarm in September; took 20 gallons from one stand and made three divisions."—N. J. Thompson, Polk County, Fla.

"The Klabuhn Brothers in Gleanings advise to buy the bees, hives, tools, and all beekeeping equipment of neighbor beekeepers who keep only a few hives or gums and so neglect them that they have disease. Can some one tell me what to do with the small beekeepers here that will not sell and will not improve their beekeeping?"—Ralph Hall, Stone County, Ark.

"Colonies in this region located exclusively in orchards did poorly. Nearly all our orchards are cherries and prunes, which are never sprayed with arsenate as apple trees are. The wasp is one of the bee pests with which we have to contend. We bait him, using a wire flytrap in which is placed a small piece of salmon. In this locality we do not seem to need the winter protection discussed in Gleanings. For instance, I have found that colonies wintered under a low shed closed on three sides but entirely open to the east came out in fine condition in the spring. The east is the direction from which we seldom have any wind. My bees remain in this shed the year around."—J. W. Beekley, Marion County, Ore.

"This season in Australia is an exceptionally good one for honey. Thousands of

BEES, MEN AND THINGS

(You may find it here)

tons are being produced. Myself and brother have 40 colonies, and up to the present have harvested about 5,500 pounds and expect 3,000 more. Our sea-

sons here are very irregular. One in four will be a grand honey season. Of the other three, two will be good and one almost a failure. Our beekeepers are becoming more modern in their method and are working their apiaries on the good American system, and it is becoming a big industry, especially as people are beginning to find out the value of honey as a food."—Percy Sweetman, N. S. W.

"With the temperature at 88 in the shade and bees working furiously in goldenrod, it hardly seems like the last day of October, does it? If the weather remains good, I shall probably get a super of honey from each of my colonies yet this fall from the goldenrod, which is abundant."—F. G. Berner, Orange County, Fla., Oct. 31.

"The retail price of the aluminum combs is 55 cents each, f. o. b. California, which includes the frame itself nailed and wired with four vertical wires. I have used only two of the frames this season as an experiment and have found the bees take to them readily both for honey and brood. I now have a cluster of bees on these frames for wintering and will watch results."—M. R. Delahay, Howard County, Md.

"If I were back to young days (I am now 73 years old), I would immediately figure on making beekeeping my principal and sole occupation. In the 10 years just past, while studying the bees' habits and management, I have learned to love them dearly despite the few stings given me mostly in the early years of my acquaintance before I had learned that by proper care and judicious handling stinging would be almost entirely eliminated."—E. E. Cohen, Waupaco County, Wis.

"About July 1 the bees began to let up on bringing in honey and scarcely got enough to feed themselves. At that time the small miller swarmed by the millions over all the alfalfa and clover. I could see no reason why the bloom did not still produce nectar, and my only solution of the situation was that the millers beat the bees to it, they being scattered over the fields night and day. About July 24 we had a terrific storm which nearly destroyed all the millers; and the bees got very busy again and kept it up until about Aug. 15 when they began to slow up on account of cold days. Our crop ran from 40 to 75 pounds per colony."—C. E. Crowfoot, Logan County, Colo.

"Items noticed in 1918: That in some seasons 8-frame hives are better than 10-

frame for honey production, and season of 1918 with us was one of them; that bees working on onion blossoms got dopy, stupefied and seemingly lost all control of themselves; that reports from locations five miles apart indicate the average bee does not travel five miles; that buyers are willing to pay \$7.00 to \$7.50 per case of 24 sections of good section honey, and that honey-producers are as much sought after by dealers as voters are by politicians; that while there is a pronounced tendency toward 10-frame hives, still can hardly accept the Editor's opinion that the 8-frames are in the discard."—E. J. Ladd, Multnomah County, Ore.

"Mr. Kleckler has undertaken beekeeping on a scientific scale. Among other things he has adopted the improved method of extracting the honey, which effectually eliminates the poison resulting from bee stings on the honeycomb and which has brought the extracted product into greater popularity. The previous methods employed created some prejudice against the extracted product because of the poisons which occasionally found their way into it."—Hartford Day Spring, Hartford, Mich. [A newspaper's beekeeping wisdom.—Editor.]

"I live in the city and keep three colonies in my back yard. I gave them a great deal of attention this year and was repaid for my efforts by taking off over 400 sections of beautiful honey. We have had no trouble disposing of it at 35 cents a pound, or three for \$1.00. My daughter, 10 years old, is applying the entire income to the purchase of Thrift and War Savings Stamps. I enjoy the work immensely."—Lester B. Johns, Montgomery County, Ohio.

"It is my opinion that honey will never reach the low level in price that it did when I sold out several years ago. On account of the scarcity of sugar, scores of thousands of people have learned to use honey who never thought of it before."—E. M. Gibson, Carbon County, Utah.

"Have had a very bad year owing to drouth and severe late cold in spring. However, a splendid flow has been on for the past three weeks, and I hope to extract a fair crop within the next few days."—I. D. Bailey, Orleans County, La.

"Season just closed very successful one with me. Got more than 10,000 lbs. choice extracted honey from 70 stands, spring count, with about 25 per cent increase and lots of good stores for winter."—Archie Blackburn, Rush County, Wis.

"In a Sunday-school talk a short time ago about the industry of the bees from which I drew a lesson, I stirred up a good deal of interest in bee culture and the prospect of a 'Bee Club' is the result."—M. M. Robertson, Warren County, Miss.

"Have had splendid luck with bees and fruit this season."—Wm. A. Ayers, Wyoming County, Pa.

"We have had an abundance of rain all the fall. Flowers are out and bees are swarming some. Have the brood-chambers full and one super full of amber honey. I have been keeping the bees since 1884 and never saw a fall flow anything like this one. If it should stay warm as it is now, the bees will fill another super in 10 days. This locality is as near perfection as can be if it continues warm. We are selling some honey to customers at 25 cents a pound."—M. B. Talley, Victoria County, Texas.

"The present year has been the best for queens in my experience for 13 years. I had to refuse orders for thousands of queens and was about a week behind most of the time in filling orders, altho I was on the jump every minute. It was necessary to give queen-rearing colonies stimulating feed thru July and August, as we were eight weeks without rain during those months."—J. H. Haughey, Berrien County, Mich.

"Seeing your article in the September issue on pound packages of bees, page 531, I wish to say that I consider it very important that all packages of bees while en route be screened from the light. The ordinary wire one-pound cages are objectionable because the bees worry themselves in trying to get out."—G. Guyer, Port Hammond, B. C.

"I bought a leather-colored queen of you about 17 years ago that I had for six years. I clipped her wings and at one time I had 70 colonies queened from her stock, and after she died I kept her in a small bottle until she dried down to almost nothing."—A. N. Cooke, Knox County, Ills., in a personal letter to A. I. Root.

"We had 350 colonies last spring, increased to 500, and produced \$6,500 worth of honey—12 tons of extracted and 4 tons of comb. This enabled me to take a \$1,000 Liberty Bond, for I wanted Uncle Sam to take good care of the boys."—M. A. Gill, Cache County, Utah.

"As bee study is being introduced in a mild form in the local training college here, I have been asked to give demonstrations and to assist in bee advice. I am greatly interested in introducing the American beekeeping system here."—T. E. Wise, Cradock, C. P., So. Africa.

"This season I have had sweet-clover plants of the old variety in my garden 12 feet in height. The bees have feasted all day long on them."—D. F. Tyson, Vancouver, B. C.

"Very poor prospects for next year here. The white and alsike clover are in poor condition, having had only one rain in two months. Will have to feed my bees next spring."—L. J. Bergh, Dane County, Wis.

"A colony of bees is worth \$30.00 in Denmark. Honey in Serbia is bringing \$1.00 a pound."—Francis Jager, U. S. Red Cross representative in Serbia.

I HAVE repeatedly said, during the years that are past, that when our Government would break loose from the liquor-traffic, the war would come to an end; and during these severe struggles during recent times I have been more and more impressed that our first

text, "If I regard iniquity in my heart, the Lord will not hear me," can be applied, and was intended to apply, to *nations* as well as to individuals. In all these years since our own Civil war, our own country has been "cherishing iniquity" by consenting to receive "revenue" from the liquor-traffic. It has seemed to me that it was duplicating on a large scale what some of our policemen have been doing in letting the saloon-keeper go on with his hellish traffic if he would give the policeman a certain sum of money every month; or, if you choose, as has recently been brought to light, where a woman of the street paid "hush money" to the police, once in so often, for turning their heads the other way when plying her trade. This is putting it pretty strongly, I know; but is it not true? The brewers and saloon-keepers are just now, as I write, wasting their money (at least I *hope* they are wasting it) by putting liquor advertisements in periodicals that will accept them, telling that our Government is going to lose—I forget how many millions—by cutting off the revenue that has been helping (?) to keep things going for so many years, by shutting down not only the distilleries but the breweries as well. Why, a recent advertisement in one of our city dailies had the audacity to claim that the city could not pay the *teachers of the schools* the raise in their salaries that they really ought to have consistent with the times unless they have the revenue from the saloon-keepers and brewers. Did you ever? The idea that all the schools and colleges, and I am not sure but the advertisement mentioned churches also, can not be kept up without the help of the traffic in *beer*! Well, just now we can praise the Lord because our Government has decreed that the breweries shall



If I regard iniquity in my heart, the Lord will not hear me.—PSALMS 66:18.

Righteousness exalteth a nation; but sin is a reproach to any people.—PROV. 14:34.

We have made a covenant with death, and with hell are we at agreement; when the overflowing scourge shall pass thru, it shall not come unto us; for we have made lies our refuge, and under falsehood have we hid ourselves.—ISAIAH 28:15.

be closed up December 1, 1918. Some of the said brewers in the nearby city of Cleveland are making a pitiful protest. Among other things, one brewer declared that he has just put in some new up-to-date and very expensive machinery, and this is going to be a dead loss if there is no pros-

pect of the ban being lifted very soon. How did it happen that he went ahead *and put in* said machinery at such a time as this? Election day is just before us. The cutting off of the breweries and distilleries is the result of vigorous protests from the people of our nation; and I feel sure that *more* vigorous protests are going to be the result of this coming election. It just now begins to transpire as never before that the voice of the people is going to rule; and, thank the Lord, there are more good people in our land just now than the vicious and the bad. Yes, praise the Lord, I think I may safely go further and say there are more good people in the *whole wide world*, than vicious and bad. This war has brought about an awakening and a stirring-up; and not only China, but even poor wicked Germany is beginning to consider our second text—"Righteousness exalteth a nation; but sin is a reproach to any people."

Now where does our strange third text come in—"We have made a covenant with death, and with hell are we at agreement," etc.? Years ago I used this same text and applied it to a single individual—a deluded, good-for-nothing person—a man who can best be described by the second verse in the fortieth Psalm: "He brought me up also out of a horrible pit, out of the miry clay, and set my feet on a rock." Well, it just occurred to me a few days ago that this other strange passage might also refer to a *nation* as well as individual. I hunted it up in my Bible, and went into Huber's private office and asked for his attention a minute. Then I read it to him out of the Bible. He started up in surprise and said something like this:

"Why, father, where in the world did

you find that passage in the Bible? It describes Germany just now to a dot."

Now, my good friends whose eyes rest on these pages, I want you to read that passage over and over again. Is it not indeed true that Germany *has* made "a covenant with death?" and good authorities tell us that Germany has spent years and years in making this covenant; and she has not hesitated—at least she does not hesitate *now*—to declare, "With hell are we at agreement." And then she seems to imply, certainly by *actions* if not by words, that "when the overflowing scourge shall pass thru it shall not come unto us." But, praise the Lord, at the very moment while I write she is disappointed, because the overflowing scourge has finally reached her—the scourge of the good people of the whole wide world. Now, if Germany ever tries to give a reason, what other reason, or what better reason, *can* she give than the concluding words of this text—"For we have made lies our refuge," and "under falsehoods have we hid ourselves."

At this very moment our good President is calling attention to the fact that, while Germany offers a partial if not complete "unconditional surrender," she has been sinking our vessels; and not only that, but firing on boatloads of helpless women and children in their attempt to get to a place of safety. And this last trick of the U-boats, if we are correctly informed, was to torpedo the vessel without giving the passengers a single minute to get into the lifeboats and save their lives; and not only that, her armies in the French and Belgian territory are destroying towns and cities by the wholesale. When they find that they are conquered, instead of retreating in the way conquered people have retreated ever since the world began, she is destroying churches, libraries, etc., that were the result of the accumulation of many years, and I might almost say centuries—books that can never be duplicated—just because of an insane desire to wreck and ruin everything pure and holy. Retaliation has been suggested. Some of the papers advise telling Germany that if she keeps on in this work, when our soldiers get across the line the valuable buildings and other forms of property in Germany will be destroyed in like manner. While I can hardly blame people for making this sort of threat I can not feel that it is the right and proper thing for *Christians* to do. There is trouble enough and enough loss of property and life already.

I think it was just a few days ago we had an account of a German soldier who was near death. He was calling piteously

for a drink of water. Two young American boys were passing near him, and, altho every minute of their time was urgently needed to give a drink of water to our own suffering and dying people, this boy could not resist the appeal from a dying man. He gave him the full contents of his own canteen. Did this German soldier thank him? I will tell you what he did. Under the invigorating influence of the *drink of water*, he roused up enough to shoot this poor boy, who died instantly as the reward for giving a drink to one whom he supposed to be a dying man. Is this a type of Germany? I can not think for a moment that it is. It is a type of those who have been ruling Germany, and a type of the pupils, at least some of them, they have sent to war.

Let me now digress a little in closing. For years past, Germany has been receiving the credit of being progressive. A large part of our Christian people, and I am sorry to say considerable numbers of our ministers of the gospel, have been listening to the teachings of Germany. They called it "higher criticism." You know all about it. I will give you just one illustration. A minister of the gospel in good standing, supposed to be thoroly orthodox, suggested in a men's Bible class on Sunday that it was *possible* that no such persons as Adam and Eve ever lived. Maybe you have heard such talk. When it was repeated in my hearing I replied, "Why not go a little further and say that '*possibly*,' Abraham, Isaac, and Jacob never lived—that it was only symbolic?" And then I added (please remember this was years ago), "If you will go to the editor of our *Medina Gazette* he will fall right in with you, and also add that it is not unlikely that even the *Lord Jesus Christ* never had an existence. He will tell you it was all a tradition without any foundation."

I do not think I need waste any more time in considering Germany's higher criticism, or, if you choose, Germany's "Kultur." It has got the "discard" so severely that she will never be quoted again.

Just one more illustration of that comes to mind just now. Some forty years ago the editor of this same *Medina Gazette* announced that a distinguished geologist, who had contributed largely to the columns of a certain scientific magazine, would address a Medina audience. In telling of the discoveries that had been made in regard to Bible teachings, and with the teachings of science, he made some slurring remarks in regard to the Christian religion. I am sorry to say that at that time there were quite a good many "advanced-science"

people in our community, and they cheered at this skeptical talk. But there happened to be in the audience a well-read, up-to-date, minister of the gospel. About this time he rose up and asked to have a word. He asked the German professor with the high-sounding name a few questions. The professor tried to answer, but got into deep water; and finally got mad and used such words that his audience hissed him down.

Just recently some celebrated German professor gave some lectures in some of our eastern cities and had several prominent articles published in our leading magazines in defense of the use of alcoholic stimulants. Many good people were for a time deluded by his sophistry; but that was before the war time. Nobody now, would take stock in any preacher or a professor recently from Germany. In fact, unless things have the stamp of "Not made in Germany" nobody would think of buying at any price.

The *Scientific American* and some others of our leading journals have been discussing the matter of what we shall do with Germany when the war is ended. First and foremost, Germany must offer an unconditional surrender. I hope and pray that before these lines are before you such will be the case. In that same 28th chapter of Isaiah there is one more verse which I wish to quote, as follows:

"Your covenant with death shall be disannulled, and your agreement with hell shall not stand; when the overflowing scourge shall pass thru, then ye shall be trodden down by it."

When we were boys and killed a snake, especially one that we regarded as venomous, we used to pound that snake a long time after we supposed it was dead. Shall we do the same thing with Germany in revenge for her awful cruelties and atrocities? God forbid. Shall we not, rather, remember those wonderful words uttered by our dying Savior—"Father, forgive them, for they know not what they do"?

COLD GREENHOUSES, OR GREENHOUSES WITHOUT ARTIFICIAL HEAT.

On reaching my Medina home, April 19, I was both pleased and astonished to see the collection of beautiful plants in the little greenhouse belonging to one of my daughters. My first expression, almost, was in regard to the wonderful health and vigor that every plant seemed to show—splendid color, no trace of wilting or injury from either cold or frost, and not an unhealthy specimen in the whole greenhouse.

When I asked if it was not a little too cool for tomato plants she replied, "Father, I have found that plants do better by keeping the greenhouse rather cool; and another thing, we have no insects of any sort where we do not let it get too warm when the sun is away up." And then I observed a large door that was kept wide open into the spacious basement or cellar. The result was that the plants did not get chilled during frosty nights, and also that the greenhouse seldom became too warm in the middle of the day, because the air from that large basement was constantly changing place with the air in the greenhouse. Of course, during a large part of the day the ventilators were down; but her success was mainly due to keeping the greenhouse rather cool all the time. Then I remembered that Eugene Davis told me years ago that he had the best success with lettuce in greenhouses when he kept the temperature just about right for working in his shirt-sleeves. And then I also recalled that Peter Henderson, years ago, suggested building a greenhouse with slatted floor, and a large deep cellar under it. Such a greenhouse in a locality where it is not too cold in winter, or in almost any locality, along during the spring can be made to give splendid results without any heating arrangements at all.

SWEET CLOVER ONCE MORE: SOMETHING STILL MORE ENCOURAGING.

We clip the following from a recent issue of the *Rural New-Yorker*:

SWEET CLOVER FOR PASTURE.

I am interested in sweet clover for pasture. How long can it be counted on for permanent pasture if kept fed off? and will it do well on clay soil that is not well drained? U. S.

Elmira, N. Y.

Sweet clover is a biennial, and the roots rot in the soil at the end of two years. As a pasture it will be a perennial if allowed to go to seed each year, which it naturally will do in a pasture lot, and in that case you will have good grazing every year. A sweet-clover pasture will take care of two animals per acre if the soil is good, while no other grass will support more than one to every two acres. Your soil is just like mine, and I think clay is the ideal soil for sweet clover. After years of experience I claim that neither alfalfa, the clovers, soy beans, vetch, or any other legume, is in the same class with sweet clover, either as pasture, hay, or as a soil renovator. If the following rules are followed you will make a grand success of sweet clover, and if not, in nine cases out of ten you will fail.

Sow only unhulled seed at the rate of 20 or 25 lbs. per acre. Sow on disked land, preferably land that was previously in a hoed crop, or grain stubble, between Nov. 1 and March 1, without a nurse crop, and the next September you will get as good a crop of the best hay in the world as you ever raised on that land. If for pasture the new seeding should not be grazed until it is six inches high, about June 1. If you sow on sod, plow it before Nov. 1, and then disk and sow in November, rolling it in. Hull-

ed or scarified seed must be sown in the spring, and generally dry weather takes it before it is large enough to withstand a drouth. If sown in November or before March 1 it will have growth enough by May 1 to stand any weather—but only unhulled northern seed must be used. A. BLOOMINGDALE.

The above puts the value of sweet clover for stock rather strongly; but it may be all right. I should say 20 to 25 lbs. of seed to the acre is more than is needed; but for unhulled seed it may be all right; and the direction for sowing it from Nov. 1 to March 1 is not exactly what I should advise; but, unfortunately, the writer does not tell where he lives. I do wish every writer for agricultural periodicals would tell where he lives and when he wrote. It is especially important that he give his county and state, even if he does not give his address. Some time ago we had a crop of sweet clover that was cut for seed; but it was rained on so many times that we feared the seed was unfit to send out; but after being hulled and scarified we sowed it in our cornfield last summer, 1917, and this summer also, after the last cultivating, and both times it came up so thick it seemed as if every grain must have germinated. As sweet-clover seed is now quoted in catalogs and daily papers among other clovers, and is on sale at almost every seedstore, we have discontinued offering it. It is certainly very refreshing to me to see that it is now quoted side by side as of equal importance with the other clovers. The writer of the above, as you will notice, puts it *ahead of all the other clovers*, not even excepting alfalfa.

SWEET CLOVER—THE BIGGEST STORY OF ALL.

We clip the following from *The Rural New Yorker*:

SWEET CLOVER ON STUMP LAND.

We have urged our readers to try sweet clover, and have printed some true stories about the work this plant can do. Now comes a report from Oregon, vouched for by reliable men. There is much stump land in the Pacific Coast country. It is usually good soil, but the cost of clearing and stumping is so great that it will hardly pay as a business proposition. Near Grant's Pass a new plan was tried out in handling this kind of land. The stumps will largely decay in about five years, and the problem was to make these years productive if possible. The plan was to seed sweet clover after burning the land over and then using the place for pasture. Here is the story as sent us:

Having a lot of this kind of land to clear at Winona ranch, and not wishing to waste the use of it for a long time, we tried the sweet-clover method of clearing. We had four acres slashed, the timber and brush cut and left on the ground just as it fell, in the spring and early summer of 1915. This cost us \$8 an acre by contract.

In November of that year we burned over this slashing, getting a good clean burn with a fairly deep layer of ashes. In the following February, between the first and the fifth, we sowed five pounds per acre of scarified white-sweet-clover seed on the ashes among the stumps, which were so thick that

it would have been absolutely impossible to harrow or disk or work the ground in any way whatsoever. We simply sowed the seed broadcast with an ordinary Cahoon seeder.

In every place where there was a good layer of ashes the sweet clover came up splendidly, every seed apparently growing, while where there was little or no ash layer the stand was poor or lacking. In this case the ash was good on about 90 per cent of the land; and we got a fine stand on 90 per cent of the four acres therefore.

The following season, from February 1, 1917, on thru the spring, summer, and fall we pastured seven head of milch cows and an average of three head of horses, mules, and other stock on this piece of sweet clover, with no other feed from May 1 on, except 25 pounds of shorts per day to the herd of milch cows.

The cows kept in splendid condition, as did the other stock; and the cows in milk averaged 900 pounds of milk per cow per month straight thru. These cows, registered Holsteins, gave a return of \$12.80 per cow per month net for their sweet-clover pasture in butter fat and skim milk, after deducting the labor charge of \$3.70 per cow per month.

Meanwhile the sweet clover is growing as fast as the stock eat it, and is seeding heavily in spite of the strenuous pasturing. It grew to a height of 10 feet in places, and the cattle ate it down again to about a foot high, at which height it now keeps growing out and branching.

Besides the excellent returns in milk from this pasture among the stumps, the sweet clover is improving the land steadily by taking nitrogen from the air and putting it into the ground as all legumes do, and also by adding humus to the ground thru the decay of its root after the second year. Also the stumps are rotting out, thus greatly reducing the cost of final clearing of the land to probably ten or fifteen dollars per acre instead of sixty, as it would have been originally.

The cost of getting the land into sweet clover, including slashing, burning, seed, and sowing, was about \$10 per acre; while the net returns in the second crop year were well over \$50 per acre at the most conservative figure.

Nothing is said in the above clipping about bees. Surely they were on hand. We take it the ashes were from hard-wood timber.

THE ELECTRIC WINDMILL FOR THE POULTRY-KEEPER.

Years ago there was talk about lighting up the henhouse by means of lanterns or electricity in order to get more eggs. But I shall have to confess that I paid very little attention to it because I thought it was contrary to nature, or some new fad that would soon be forgotten. And I do not know but I was right in regard to the latter part of it, as it *did* seem to be forgotten; but you may be sure I was both startled and surprised to find an article on this subject in the *Rural New Yorker* of April 6. I give right here a clipping consisting of the first paragraph of that article entitled "Extending Daylight for the Hen." If you are keeping chickens to any extent, I think you will send at once to the *Rural* people for the number containing the whole article.

Publicity is now being given to a method of increasing winter egg production that has shown marvelous results in the hands of a considerable number of experimentors and commercial poultrymen. In fact, so remarkable are the results so far obtained we may soon expect to see in the city dailies such startling headlines as "The Cold Storage Warehouses Frozen Out," and "December Eggs at May Prices."

Briefly the idea is that, when the days begin to shorten and the nights to lengthen, the average hen cannot get food enough before going to roost to keep her digestive apparatus working up to the capacity it should work, to enable her to lay an egg every day; and, consequently, she takes a rest, perhaps of several weeks or perhaps several months; whereas she might lay as many eggs in December, or perhaps *almost* as many, as she does in May and June, if she simply had a shorter night and plenty of good nourishing food before going to her final roost. Therefore all you need to do is to light up the henhouse at 8 or 9 o'clock (or perhaps 9 or 10 by the new schedule) and give the poultry a good feed—enough to last them until morning. My neighbor Abbott down in Florida raises chickens by the thousands, and he declared some time ago that during the time of year when we have long nights the small chickens need a chance to take food in the night time; and he used a lamp brooder that not only gave out heat but gave out light enough so the chickens could feed whenever hungry. I believe the growers of Grand Rapids lettuce have found they get good merchantable lettuce quicker by the help of the electric light during long nights as above. Now, some of you may ask where the windmill comes in. Why, you want a windmill for lighting your home, barns, and outbuildings; and when you get it, it will be the cheapest mode of giving poultry a chance to feed in the night time.

The closing paragraph in the *Rural* puts in a caution about using eggs for *hatching* from hens that have been kept laying all winter under the stimulus of late suppers, as outlined above. Better have a separate pen for producing eggs in the good old-fashioned way without the after-dark suppers.

If I regard iniquity in my heart, the Lord will not hear me.—PSALMS 66:18.

On page 52 of our issue for January I suggested that the reason God did not hear and answer the prayers of the good people in our nation was because our nation year after year was consenting to receive revenue from this hellish traffic. The more I thought of it, and the more I prayed over it, my assurance grew greater that I was right about it. In Our Homes for this

issue I started out again and made the point very strong that the little text might apply to nations as well as to persons. Our readers will probably remember that Hobson has been urging the same thing. He said in substance that when the liquor traffic was stopped the war would stop and not before. Little did I dream, however, how soon my prediction and Hobson's would come to pass. On the 6th day of November my good friend, J. E. White, superintendent of the Anti-saloon League of Ohio, sent me a telegram which reads as follows:

Ohio dry by more than 15,000; legislature sure on ratification; nation will quickly follow. Praise the Lord for your vision.
J. A. WHITE.
Columbus, O., Nov. 6.

You will remember this was the day after election. Well, on that very same day, just a few hours later, I was startled by hearing the whistle on our factory blowing a long blast right in the midst of working hours, and it kept on blowing. When everybody rushed out inquiring "What is the racket?" the reply was that the war was at an end. You know how it was, my good friends, I presume, for I suppose most of you whose eyes rest on these pages had a similar experience. But this was by some means a premature report; and then I remembered claiming that Hobson and myself were exactly right in saying when the liquor business ended the world-wide war would end; but when I was told that it was a false report, and that the war did not end on the same day, I replied that only a few days more—possibly a few hours—would verify my prediction. Well, this morning, Nov. 11, when Mrs. Root and I were eating breakfast a little earlier than usual (because we expect to start for Florida tonight, Nov. 11) this same whistle started up a little before daylight, and soon the people were out again screaming and yelling and rejoicing; and this rejoicing and carousing has been going on at an unheard-of rate during the whole day. But, praise the Lord, this rejoicing is without the aid of either beer or whisky. Automobiles are running in every direction; flags of all sizes and nationalities are afloat, and I think it comes nearer to being a world-wide rejoicing than anything else, perhaps, our eyes have ever seen before. Business houses, factories, and everything else, are closed.

One of the first questions I asked was, "Has the whole world really stopped fighting? are implements of war actually dropped? is the whole world ready to beat its swords into plowshares and spears into pruning-hooks?"

Praise the Lord, Florida also voted dry the same day that Ohio did.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

FOR SALE.—Choice buckwheat extracted honey, fully ripened by the bees, in new 60-lb. cans.
O. W. Bedell, Earlville, N. Y.

FOR SALE.—To highest bidder, five ton basswood and clover extracted honey in five-gallon cans.
W. M. Peacock, Mapleton, Iowa.

FOR SALE.—No. 1 white extracted honey in No. 10 pails weighing 10 pounds gross, \$3.00 each f. o. b. here. B. F. Smith, Jr., Fromberg, Mont.

FOR SALE.—50,000 lbs. carload extracted alfalfa-sweet clover honey, subject to best cash offer f. o. b. Delta, Colo. Gale H. Patterson, Delta, Colo.

RASPBERRY HONEY.—This honey has just enough buckwheat honey mixed with it to color it some. It is from one of the Hutchinson apiaries, and has all the fine qualities and flavor that the Hutchinson honey is noted for. It is put up for sale in 60-lb. cans. Price, 25c a lb. Sample by mail 20c which may be applied on purchase of honey.

John Hutchinson, Lake City, Mich., R. D. No. 2.

HONEY AND WAX WANTED

Small lots of off-grade honey for baking purposes.
C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

WANTED.—Comb and extracted honey, car lots and less. Mail sample quantity and price.
W. Morris, Yonkers, N. Y.

WANTED.—Comb and extracted honey, also beeswax. Send samples.
C. S. Fryer, 386 Halsey St., Portland, Ore.

HONEY AND WAX WANTED.—Extracted honey. Mail sample and state price.
Kretschmer Mfg. Co., Council Bluffs, Iowa.

BEESWAX WANTED.—For manufacture into SUPERIOR FOUNDATION (Weed Process).
Superior Honey Co., Ogden, Utah.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston.
M. V. Facey, Preston, Minn.

WANTED.—White or light amber extracted honey in any quantity. Kindly send sample, tell how your honey is packed and your lowest cash price, also buy beeswax. E. B. Rosa, Monroe, Wisconsin.

WANTED.—Extracted honey, all kinds and grades for export purposes. Any quantity. Please send samples and quotations.
M. Betancourt, 59 Pearl St., New York City.

WANTED.—Extracted and comb honey. Carload or less quantities. Send particulars by mail and sample of extracted.

Hoffman & Hauck, Inc., Richmond Hill, N. Y.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

We are in the market for honey and beeswax. Send your best price on comb honey and a sample of extracted honey. State quantities you have, also style, size, and weight of package or section. Charles Israel Bros. Co., Inc., 486-490 Canal St., New York City.

FOR SALE

HONEY LABELS.—Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Conn.

FOR SALE.—A full line of Root's goods at Root's prices.
A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—Hand-gathered sweet clover seed now ready. Write for prices.
E. C. Bird Boulder, Colo.

FOR SALE.—SUPERIOR FOUNDATION, "Best by Test." Let us prove it. Order now.
Superior Honey Co., Ogden, Utah.

FOR SALE.—Good second-hand 60-lb. cans, two to the case at 50 cents per case in lots of 50; will exchange for honey. E. B. Rosa, Monroe, Wis.

FOR SALE.—Combined Barnes saw, two-frame extractor, good as new, half price.
Liberty Press, Box 224, Shenandoah, Iowa.

FOR SALE.—Good second-hand 60-lb. cans, two to the case, at 60c per case f. o. b. Cincinnati. Terms, cash with order. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, Ohio.

CANADIAN BEE SUPPLY & HONEY CO., Ltd.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

WANTS AND EXCHANGE

WANTED.—Second-hand honey extractor.
E. L. Gardiner, 44 Otis St., Newtonville, Mass.

WANTED.—Extractor and knife. State price.
C. O. Wolfe, Sellman, Md.

WANTED.—A second-hand Novice extractor.
C. W. Campbell, Reevesville, Ills.

WANTED.—Bees in the far south where there is early honey flow. Heard & Ellison, Kinde, Mich.

WANTED.—Colonies of bees in lots of anywhere from 5 to 500. State lowest cash price wanted.
H. G. Quirin, Bellevue, Ohio.

WANTED.—Old combs and cappings for rendering on shares. Our steam equipment secures all the wax.
Superior Honey Co. Ogden, Utah.

WANTED.—Fifty or less 10-frame hives or hive bodies in first-class condition.
C. E. Martin, Minier, Ills.

WANTED.—Good second-hand dado for making dovetailed bee hives.
W. M. Peacock, Mapleton, Iowa.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings or slumgum. Send for our terms and our new 1918 catalog. We will buy your share of the wax for cash or will work it into foundation for you.
Dadant & Sons, Hamilton, Illinois.

WANTED.—50-acre equipped bee, dairy and fruit farm, good buildings, near town, western New York preferred. Matt Johnstone, Cayuga, Ont., Can.

WANTED.—Beeswax. We will pay for average quality beeswax delivered at Medina, 36c cash, 38c trade. We will pay 1 and 2c extra for choice yellow. Be sure your shipment bears your name and address as shipper so we can identify it on arrival.
The A. I. Root Co., Medina, Ohio.

I will trade for hives of bees or bee supplies, one acetylene gas plant, made by Oxweld Acetylene Co., of Newark, N. J. I have used this gas plant one year only, and I guarantee it to be in perfect condition. With the above plant go the lighting fixtures, three-burner stove and oven. I paid \$187 for the gas plant. If interested write to
D. E. Evans, Elizabeth, Pa., Box 345.

AUTOMOBILE REPAIRS

AUTOMOBILE owners should subscribe for the **AUTOMOBILE DEALER AND REPAIRER**; 150-page illustrated monthly devoted exclusively to the care and repair of the car. The only magazine in the world devoted to the practical side of motoring. The "Trouble Department" contains five pages of numbered questions each month from car owners and repairmen which are answered by experts on gasoline engine repairs. \$1.00 per year. 15 cents per copy. Canadian subscriptions, \$1.50. Postals not answered. Charles D. Sherman, 107 Highland Court, Hartford, Conn.

BEEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, R. D. No. 3, Vincennes, Ind.

Hardy Italian queens.

W. G. Lauver, Middletown, Pa., R. D. No. 3.

FOR SALE.—Three-band Italian queens.

W. T. Perdue, R. D. No. 1, Ft. Deposit, Ala.

No more queens this season. Root's beekeepers' supplies. A. W. Yates, Hartford, Conn.

Well-bred bees and queens. Hives and supplies.

J. H. M. Cook, 84 Courtland St., New York.

Golden Italian queens, untested, \$1.00 each, six for \$5.00. E. A. Simmons, Greenville, Ala.

"SHE SUIT ME" Italian queens; \$1.00 from May 15th to Oct. 15th.

Allan Latham, Norwichtown, Conn.

FOR SALE.—Three-banded Italian queens, safe arrival guaranteed. Write for prices. J. A. Jones & Son, Hope Hull, Montgomery Co., Ala.

THREE-BAND ITALIANS ONLY. Untested queens, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50. H. G. Dunn, The Willows, San Jose, Calif.

GOLDENS THAT ARE TRUE TO NAME. Untested queens, each, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35.00; 100, \$67.50.

Garden City Apiaries, San Jose, Calif.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey gatherers as can be found; each, \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

J. B. Brockwell, Barnetts, Va.

Golden and 3-banded Italian queens will be our specialty. We can also furnish Carniolans. Tested, \$1.00 each; untested, 75 cts. each. Bees per lb., \$1.50; nuclei, per frame, \$1.50. Send your order for bees early.

C. B. Bankston & Co., Buffalo, Leon Co., Tex.

FOR SALE.—60 colonies of three-band Italian bees in sound standard 10-frame hives, Hoffman frame, guaranteed to be free from disease, one story complete, \$7.00 per colony. On account of selling bees by the pound we have a big stock of 10-frame second-hand hives all the standard size, with Hoffman frames in hives and supers, some 700. One-story dovetailed hives with frames, cover and bottom. \$1.25 each; bodies with frames, 65c each; Ideal supers with frames, 40c each. Some 300 homemade, same material halved at corners and nailed both ways, just as good as the dovetailed but do not look so well, complete hive, \$1.00 each, supers, 30c each, bodies with frames 55c each. All hives are painted white. We also offer new nucleus and shipping cages all nailed up ready for use as follows: 28 3-frame nucleus, 30c each; 57 2-frame nucleus, 25c each; 28 3-pound cages, 40c each; 148 2-pound cages, 30c each; 150 1-pound cages, 25c each.
Hyde Bee Co., Floresville, Tex.

HELP WANTED

Good queen-breeder wanted for 1919. State experience and salary expected, for position in village. Good school, churches, etc.

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WANTED.—One experienced beeman and one helper. Steady employment for the right men. We use auto trucks and power extractor. We have fine roads and fine climate. State experience and ability; also wages wanted.

W. J. Stahmann, Clint, Texas.

SITUATIONS WANTED

WANTED.—Position with bee man for season of 1919. Distance no objection. California preferable or any state. Have some experience. Not afraid of work.

Carl Erikson, Nora Springs, Iowa.

"Special Crops" A high-class illustrated monthly journal devoted to the Growing and Marketing of Ginseng, Golden Seal, Senega Root, Belladonna, and other unusual crops. \$1.00 per year. Sample copy 10c. Address
Special Crops, Box G, Skaneateles, New York

DOES IT PAY?

Within two days after the November Gleanings was out an advertisement in that issue had brought to the advertiser eight replies, and cash sale of all that he had to sell.

Does it pay to advertise in Gleanings?

If you have something to sell or want something, advertise in these columns and you will get results.

Address

Gleanings in Bee Culture, Medina, O.

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family life to-day than
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No two-dollar bill will do so much for Christmas and all the year round as the one you spent for fifty-two issues of

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It is a gift that fits all the family and befits you as the giver. It comes 52 times a year for all and is filled with real cheer and courage, with ideals in every line of every story or bit of fun. Wonderful variety and in weekly installments. Supplies all ages. **Serials, Short Stories, Articles, Receipts, Sports, Games, Money-Saving Suggestions, Home Efficiency and Economy, etc.**

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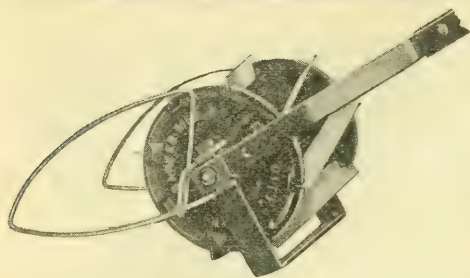
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THE YOUTH'S COMPANION, BOSTON, MASS.

AROUND THE OFFICE

M.-A.-O.

Well, I've been up agin it hard again this past month. It jest seems as if Old Man Trouble was a waitin for me with a big club around every corner I turn and some places he's square in the middle of the road straight ahead unavoidable and not hidin around no corner at all whatever but seemin to advance on me purposely. I'll give a example. The uncontrollable powers as what runs this universe as they please without consultin anybody at all seen fit this year to put the best three or four bass fishin days of the whole summer jist betwixt the end of clover flow and the beginnin of buckwheat flow. I felt the moral promptins and surgins of duty to take off the partly filled supers of clover honey and extract em when it orter have been done, but I didn't yield to it. In a unguarded moment I yielded to the bass impulse about four or five days in succession, and when I got thru with this glorious time I hadn't no time for extractin nothin except regrets for not doin what I oughter have done when I oughter. I don't know what it is in my natur that has given me a predisposishun to hold onto a fish pole rather than the handle of a honey extractor. But it has just so. I can make for the creek down behind the woods on a good bass day like a steer goin thru the corn, but I allays seem dull and listless around a honey extractor. Well, you see I used my extractin days of grace all up without doin any extractin, and the bees went right ahead with the buckwheat harvest on schedool time. They don't have no bass temptations and they seem to think the principal thing in life is to break their fool necks workin. They don't know no better I spose, but it makes me pretty nigh hate 'em sometimes, for allays after yieldin to the promptins of fishin and gettin back to my apiary they seem to be accusin me of shortcomins along the work line. There they allays are with their coats off, so to speak, overworkin as I see it, and its a fact if I don't feel mean around em. I tell em they're fools right to their faces and that one hour of good fishin is worth six weeks frayin out your wings gatherin honey for somebody to steal from you and they jest keep on workin and I get to feelin meaner and meaner all the time. But I'm digressin. You can see that my extractin supers bein partly filled with clover honey, me a fishin, and the bees a bringin in buckwheat honey, had a pretty good chance of gettin filled up with mixed honey. Jest so. When I came to extract this month the resultin honey woant just exactly water white. Nor it woant coal black. It was both. When I tried to trade it for money to the Airline Honey crowd they stuck up their noses at it and tried to depercate it. That didn't make me think any less of it tho. But they knew I had a partner in the honey producin business what I had promised faithful I would-



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Around the Office—Continued

n't let the clover and buckwheat flows get mixed. He furnished all the capital invested and I was to furnish the experience, the industry and the faithful performance of duty at all times, whether the bass fishin was good or not I spose. So those Airline people had me where the squeezin was good and the hair was considerable short, and they proceeded exactly accordinly. They pointed out if I'd sell instantaneously, my partner needn't ever see the honey, and they said money didn't show dark color, even if the grand total was a little disappointin. That argument got me altho as how it oughtnter. It was jest a natteral going down hill morally, beginnin with fishin when I ought to have been extractin, and endin by sellin my partner's honey and my own mostly for the purpose of coverin up my fishin tracks. Then, bein as how the slideways is always all greased for the occasion when a feller begins to toboggan, somebody told my apiary partner almost all the truth in the case. What he told me woant all flatterin, and he was madder'n a mad dog. Then it sifted thru to my domestic quarters, and I had to fortify myself agin a new offensive from that direction. I can't tell anythin more about it now. It's too oppressin.

But was I to blame for the best fishin weather comin just when it did? I woant, for I don't control the weather. Then I

(Continued on page 762.)

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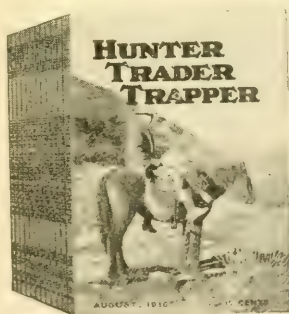
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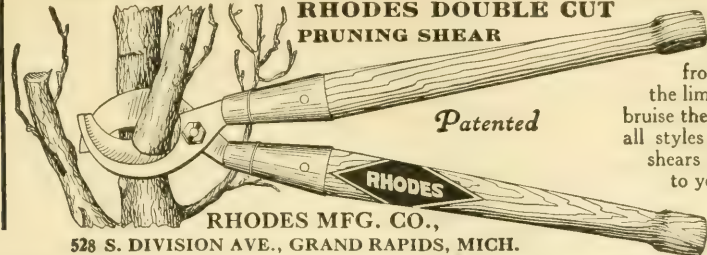
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Around the Office—Continued

want in no way to blame at all as I see it. I am a poor persecuted beekeeper, so I am, set on by the bees and by my apiary partner and by Airline and by my relations. Afore I close I want J. L. Byer specially to reflect on what I have just said. I want him to see the dangers in bein a fisherman and a beekeeper, for he's liable sometimes to be a fisherman when he ought to be a beekeeper and never a beekeeper when he ought to be a fisherman—never. If you expect to continuo beekeepin and your wife's trustin love and affection, Byer, I believe I'd give up fishin. I know I would. But I don't know as they're worth it, tho, so I don't.

* * *

Woant that a awful big puff Editor E. R. Root gave Iony Fowls in the last Gleanins? He didn't ask me anythin about it afore doin it. She is smart all right, and she knows a lot about beekeepin, but I am bound to let in more light on things around the office when I can, and this is jest where I can. She is disputatious somethin like Dr. Miller. That's some disputatious. There's been more fur, feathers, and some-

(Continued on next page)

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Around the Office—Continued

times quiverin pieces of real human hide fly-in thru the air hereabouts since she jined the Gleanins force than there ever was afore. You can't turn around and not find a apicultural argament in full blast and Iony Fowls a fannin of it likely enough. She aint afraid of nobody, includin me, Mel Pritchard and the automobile robbers between Medina and her home in Oberlin, 30 miles away. She shoots to kill in all departments—that's the kind she is. I kinder shudder as I think o her, and yet I kind o like her.

* * *

Louis Biediger of La Coste, Tex., seems to be a kind of a frank open sort of feller. I judge he's a true sufferin victim of thirst at times too for when he was a writin to the Roots the other day he ended up his letter by sayin: "I wish to Jerusalem that I could get some good wholesome beer. Where can I get it?" How much enlightenin informa-shun he got on this burnin question of the

(Continued on next page.)

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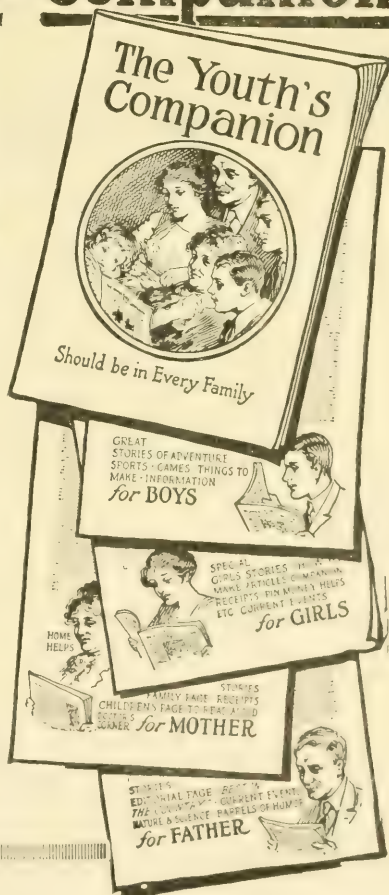
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Around the Office—Continued

hour from Mr. A. I. Root or from Mr. E. R. Root I don't know. I aint sure he got any encouragement at all whatever. I only wish I had his nerve. I'd become a poison snake juggler and hunt lions in Afrika between times, or I'd lend it to some beekeeper to start a dispute with it with Dr. Miller on some beekeeping question. If it wasn't worn out by that time I'd match it up agin Doc Phillips's nerve.

* * *

Steven T. Byington of Ballard Vale, Mass., writes: "If M.-A.-O. finds the squash-borers and squash bugs worse this year than ever before, I commiserate him. In my locality the black squash bugs were worse winter-killed than the bees were, so that there has been hardly a bug all summer." All right, Mr. Byington, but it weren't no such condition here. They were thicker'n flees on a dog. If I'm goin to keep up this language reform next summer, I've got to move into a place where the squash bugs have been winter-killed jest as in Byington's country. I can't keep inside Root language rules with squash bugs around, I jest can't. I've got to talk to squash bugs as they deserve, and I never seen a Root that knows how to talk to a squash bug. Formerly I did, bi Sulphide.

* * *

Thanks, C. B. Palmer, General Merchandise also Dealer in Bees and Bee Supplies,
(Continued on next page.)

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Around the Office—Continued

Bradshaw, Nebr. It helps some, when a feller's carrots have all ben froze the way mine was, to have some one's compliments and wishes to the effect you wont die. You wait till you're suggested to every time you go to domestic headquarters that there woant no use of the carrots all bein froze if you hadn't a cared more for fishin than for your own happy home and fireside and people inhabitin the same. You'll be grateful for any suggestion from anywhere to the effect that anybody aint dissatisfied with you bein alive.

* * *

"Give poor M.-A.-O. a chance. He's reformed beyond all expectation. Don't muz-

(Continued on next page.)

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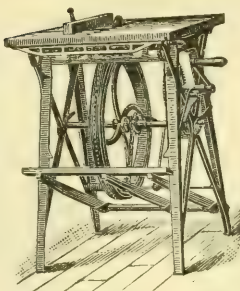
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Around the Office—Continued

zle him up too much, but let him inhale freely the fresh autumn a-i-r, and don't give him too much of the other 'A. I. R.'—Rev. Bede Mayemberger, Freeport, Minn.

Say, but that's refreshin, Rev. Mayemberger. When I move to Freeport I am goin to jine your church. I ain't yet above keepin company with the right kind of a preacher.

* * *

"Thanks to M.-A.-O. for the Editor's swimming picture. It's the next best thing to Mel Pritchard's picture."—Ralph Hall, Mountain View, Ark.

Mel, you ain't no friend of mine, and I don't care much what people say about you. But I wouldn't blame you if you got onto the train and went out to Mountain View, Ark., and came back with a homicidal record won in a altercation with Mr. Hall.

* * *

I know one set of dingbusted swarmin bees that I bet got their craws full of travelin for oncet and wished they had stayed home. Wesley Foster of Colorado was tellin about it here around the Roots' office not long ago when he was here. He said he was shippin bees one day last spring from his apiary in Colorado away up into Idaho about 900 miles. He was makin big pack-ages of 'em by screenin the tops and bot-

(Continued on next page.)



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Around the Office—Continued

toms of 8-frame hives and everlastinly hus-
tlin 'em aboard a box car. Just then a
whoopin thru the air came a all-fired big
swarm and clustered on a bush right near
Wesley. "All aboard for Idaho," says he,

and dumped that fool swarm into a package
afore they knew what had happened to 'em,
and four days later they was trampin Wes-
ley Foster's tread mill a thousand miles away
in Idaho. I say them bees found it wasn't
so awful smart to swarm as they thought it
was.

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Our late yearly inventory shows that we have a small stock of standard goods which are a lit-
tle out of date and for which we have only limited demand. If you can use any of them now
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will be filled in rotation as received.

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2000 Open top 4 1/4 x 4 1/4 x 1 1/2, A.
11500 Open top 4 1/4 x 4 1/4 x 1 1/2, A 3/4-split
5500 4 1/4 x 4 1/4 x 1 3/8 plain, B.
500 4 1/4 x 4 1/4 x 1 3/8 plain, B.
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500 4 1/4 x 4 3/4 x 1 3/8, 1/4-split, A.
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500 4 3/4 x 4 3/4 x 1 3/8, 3/4-split, A.

500 3 3/8 x 5 x 1 1/2, 3/4-split, B.
500 3 3/8 x 5 x 1 1/2, 3/4-split, A.
500 4 1/4 x 4 1/4 x 1 1/2 2-beeway, A.
500 4 1/4 x 4 1/4 x 1 3/8 plain, A.
500 4 1/2 x 4 1/2 x 1 3/8 2-beeway, A.
1500 4 1/2 x 4 1/2 x 7-to-ft. 2-beeway, B.
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Those who love America, believe in humanity, and have faith in God, must count themselves proud to answer "present" at the Red Cross Christmas Roll Call, December 16th to 23rd, during which period the privilege of membership is to be extended to every loyal American.

Let us grasp this opportunity to make this a Red Cross Christmas.

Let us be able to tell our boys at the front, when we send them our Christmas greetings, that America stands solidly behind the Red Cross—their Red Cross—with full membership in every home.

Let us tell them that this beautiful spirit of love, and compassion, and generosity, and unselfish service, has entered every home in our land—from the smallest farm in Maine to the largest ranch in California.

No other message we can send will give them greater courage or encouragement. They know what the Red Cross means to them.

Join the Red Cross

All you need is a heart and a dollar

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THE A. I. ROOT COMPANY, MEDINA, OHIO

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Fly Your Flag



We Want to Help YOU

Get more honey and make more money. Our fifty-years' experience making beekeepers' supplies and appliances has taught us how to make hives, frames, smokers, extractors, and other appliances as perfect as possible to make them.

To best serve the interests of beekeepers everywhere is our aim. We have branch offices for the convenience of our customers in all large cities. Write us direct for any information you may want....



The A. I. Root Company

Established 1869

Publishers of "Gleanings in Bee Culture"

Medina, Ohio

What Would YOUR Bees Do?

WILL YOU GIVE THEM THE
CHANCE THIS MAN DID ?

Farmington, New Mexico,
October 24, 1918.

Dadant & Sons,
Hamilton, Illinois.

Gentlemen:—Would be pleased if you would quote me your prices on working wax into foundation in 100-lb. lots or more : Medium Brood, Light Brood, Thin and Extra Thin Surplus.

I have used considerable of your foundation and tested it with other makes; and I don't know why, but my bees will work on yours first. I patched a lot of drone combs last season and used your foundation along with some others, and yours would make lots the best job, and it is a fact that my bees would draw yours out and leave the other or gnaw at it, while I could see no difference to look at it.

A. N. NORTON.

Are your bees any different from those of Mr. Norton? Is the bees' preference for a certain foundation any different in New Mexico to what it is in Maine, or in California, or in England?

Their quick response to DADANT'S FOUNDATION should mean a larger per colony production of honey for you.

USE IT AND BE CONVINCED

DADANT & SONS
HAMILTON, ILLINOIS

